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Original Articles

CUTE DIVERTICULITIS OF THE SIGMOID, WITH OPERATION BEFORE RUPTURE.*

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NEW YORK.

In an earlier paper[1] I reported the histories of six tients operated on for intra-abdominal suppuration. each case I believed the infection to have been caused inflammation of an acquired diverticulum of the left lon.

'n two of these cases I was able at operation to demstrate a gangrenous rupture of the diverticulum of e sigmoid, in each of which an oval concretion was und which had acted as a predisposing cause of the fection.

Since the publication of that paper one of the pants reported, in whose case an acute diverticulitis was monstrated, experienced a second attack and was sucssfully operated on by my assistant, Dr. Carleton P. int.

s this is the only recorded instance in which an indial has recovered from two operations for this con- ı, and as it is the first case of acute diverticulitis colon in which diagnosis has been made and oper- performed before rupture had taken place, I felt was of sufficient interest to warrant my present-

ent.—This was a man 45 years of age. He had always ed good health; had never suffered from digestive disances, suggesting appendicitis, gallstone colic, or peri-

st Attack.—In August, 1902, while at dinner he was sudly seized with an attack of abdominal pain, nausea and tness, which necessitated his leaving the table and retiring is room. The attack soon passed off and he was able to his friends later in the evening. The following night ved a restless one, as he had more or less *constant pain in* lower portion of the abdomen, which prevented sleep, and times was *accompanied* by nausea and general bodily weak- The following day he continued to feel badly, but t up and about for the reason that he was a guest at a untry house, and did not wish to inconvenience his host. ter in the day he went for a drive and suffered acutely from jolting of the vehicle. In the evening he was obliged to a physician, who, after examination, *pronounced the case* e of colitis. He returned to the city the following day, and the *symptoms continued*, he remained in bed. During five s he continued to suffer with pain in the lower left quadt of the abdomen, fever, and general malaise.

amination.—When first seen by me the temperature was ulse, 110; leucocytes, 17,000. There was marked rigidity of the left rectus muscle and a tender mass in the iliac fossa.

Operation.—He was immediately removed to the Roosevelt Hospital, and under ether anesthesia, an incision was made over the most prominent portion of the tumor. After dividing the tissues of the abdominal wall, a large abscess cavity was entered, which contained about 120 c.c. of foul pus, and an oblong, fecal concretion. On washing out the abscess cavity a small ulceration was seen in the wall of the sigmoid, through which escaped a small amount of fecal matter. The cavity was packed with sterile gauze, the wound partly united, and a dressing applied.

Course of the First Operation.—After operation the temperature and pulse rapidly declined to the normal, the pain ceased, and the appetite returned. The discharge from the abscess cavity gradually diminished, until a cathartic was administered on the fourth or fifth day. This gave rise to a very abundant fecal discharge, which continued for several days. It gradually diminished after this period, and the sinus finally closed in about six weeks from the time of operation. The patient remained in perfect health for a period of five years and four months.

Second Attack.—In January of this year he experienced an acute pain in the abdomen, accompanied by nausea and general malaise. The pain at first was more or less generalized over the entire abdomen, but later became localized in the left iliac region, and was so similar to his previous attack as to at once suggest to the patient's mind a repetition of his former illness. The temperature was moderately elevated, and the pulse accelerated. As I was unable on account of illness to respond to his summons, I asked Dr. Flint to see him.

Second Examination.—At the time of Dr. Flint's first visit the pulse was 80; temperature, 101; leucocytes, 15,800; 80 per cent. polynuclears. The abdomen was not distended. On palpation there was felt a well marked muscular rigidity in the left inguinal and lumbar regions, more particularly to the outer side of the left rectus muscles. This region was sensitive to the touch, the point of greatest tenderness being midway between the anterior superior spine of the ilium and the umbilicus. On deeper palpation a distinct mass could be felt about the size of a small orange, near the anterior spine. This mass was exquisitely sensitive to the touch, and seemed to lie directly beneath the scar of the old operation. Examination of the lungs and heart was negative. The free border of the liver could be palpated about one inch below the costal margin. The spleen was not felt. There was no costovertebral tenderness. The urine was turbid, acid, 1031, contained no albumin, sugar, pus or blood.

An ice-bag was placed over the tender area and the patient passed a restless night. On the following morning the temperature was 100; pulse, 82; tenderness and muscular rigidity about the same. There was, however, rather more spontaneous pain, which was of an aching character. Later in the day the temperature rose to 102.5; the pulse-rate was increased, and the patient complained of more pain and tenderness. On examination the mass seemed somewhat larger, but this was difficult to appreciate on account of the fact that the muscular rigidity was considerably increased, and now involved the lower two-thirds of the rectus muscle. As it was evident that the condition was a progressive one, Dr. Flint made the diagnosis of acute diverticulitis, and ordered the patient's removal to the Roosevelt Hospital for operation.

Second Operation.—After the usual preparation, under ether anesthesia, an incision was made directly over the mass, which

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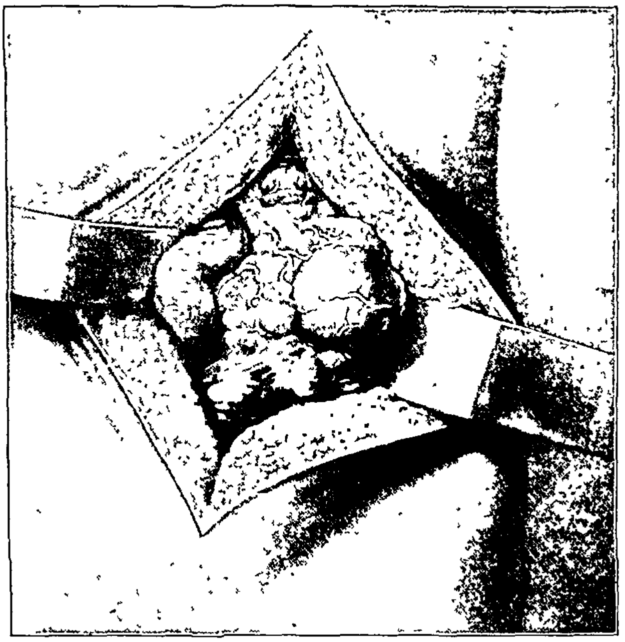
ead in the Section on Surgery and Anatomy of the American Association, at the Fifty-ninth Annual Session, held at o, June, 1908.

Etiology of Certain Cases of Left-sided Intra-abdominal Supation, read before the American Surgical Association, May, 1907.

excised the seat of the previous operation. Incision was deepened until the peritoneal coat was reached. An attempt was then made to expose the sigmoid on its outer aspect, which was the seat of the previous abscess. This was, however, abandoned on account of the dense adhesions, which existed as the result of the previous infection. The peritoneum was next opened somewhat nearer the midline, and a small amount of turbid serum escaped. The intestines lying in the left iliac fossa were moderately injected, and in places glued together by a fibrinous exudate. On exposing the upper part of the sigmoid it was found to be deeply injected and edematous. On the median side of the gut near its mesenteric border, and extending well on to the median leaflet of the mesosigmoid was an oval inflammatory mass 8 or 10 cm. in its longest diameter (Fig. 1). This mass was apparently made up of an acutely inflamed diverticulum covered by edematous peritoneum, to which there were attached a number of greatly swollen appendices epiploicæ. The inflamed area was acutely red, very edematous and covered with a number of enlarged and tortuous blood vessels. On gentle palpation the tumor was found to be fluctuating; it evidently contained a quantity of pus. The colon was exposed and examined for some distance above and below the inflamed lesion to detect the presence or absence of other diverticula. As none were found, an attempt was made to draw the loop of sigmoid through the abdominal wound with a view to treating the lesion by the extraperitoneal method. This was found to be impossible on account of the dense adhesions from the previous operation The parietal peritoneum was then drawn tightly around the inflamed diverticulum, and held snugly in place by a few catgut sutures at its upper and lower angles. The exposed diverticulum was then surrounded by several layers of sterile gauze, which served also to press the parietal peritoneum snugly against the loop of sigmoid and its mesentery. The wound was then drawn together at its upper and lower angles and united with silk wormgut sutures. In this manner the peritoneal cavity was completely closed, leaving only the enlarged and inflamed diverticulum exposed in the bottom of the wound.



Acute diverticulitis of sigmoid.

Course After Second Operation.—The patient made a satisfactory recovery from the anesthetic, and with aid of a moderate amount of morphin passed a comfortable night. In the morning the temperature was 101, the pulse 88. The patient passed a fairly comfortable day, there being practically no reaction from the operation. On dressing the wound at the end of forty-eight hours, it was found that two small perforations had formed, through which there exuded a moderate amount of foul-smelling pus. Later the diverticulum was freely opened, and a minute opening found, which communicated with the lumen of the bowel. From this time on the treatment consisted in daily dressing with irrigation of the wound and subsequent packing with sterile gauze. The temperature rapidly fell to the normal, the pain ceased, the appetite returned, and the bowels moved. The amount of fecal discharge from the intestinal wound varied from day to day, but was never large. The fistula finally closed about three weeks after the operation.

Last Stage of Operation.—On the twenty seventh day, as the necrotic walls of the diverticulum had entirely separated, and as the wound was well covered with healthy granulations, an attempt was made to replace the exposed portion of the intestine and to close the wound. Ether was administered, and after a thorough cleansing of the tissues, the parietal peritoneum was partly separated from its adhesion to the margin of the bowel and mesentery. The presenting structures were then pressed inward and the separated muscles drawn together by silk wormgut sutures. The peritoneal cavity was not opened. A small drain was left in the center of the wound on account of the possibility of a reopening of the intestinal fistula. No reaction followed the operation. Wound united by first intention, and the small central opening for the drain quickly filled with granulations.

Postoperative History.—As the patient was rather a stout individual, and as the abdominal muscles were somewhat flabby, he was not allowed to sit up until three weeks after the second operation. A few days later he was discharged from the hospital in excellent physical condition.

From my experience, acute diverticulitis, like appendicitis, may be divided into four clinical groups:

Group 1, in which there is a mild inflammation of a diverticulum, which subsides like a catarrhal appendicitis under rest and appropriate medication.

Group 2, in which the inflammation is more severe and progressive, in which the diagnosis is made and operation performed before rupture takes place. As the opening connecting a given diverticulum with the intestine may be small, the acute inflammatory process may serve to completely occlude it, and empyema of the diverticulum with or without the presence of a concretion may develop. The last attack of the patient reported in this paper would be an example of this type of the infection.

Group 3 would comprise those cases in which there has been a rupture of the diverticulum, with the formation of a localized abscess, either intraperitoneal, or, if the diverticulum is situated in a portion of the intestine not covered by the peritoneum, the entire process may be without the peritoneal cavity. The history of the first attack of the patient reported would correspond with this type of the disease.

Group 4 would include all cases in which a rupture of the inflamed diverticulum into the free peritoneal cavity had taken place, with a resulting spreading or generalized peritonitis. I reported an example of this type of the disease in my previous paper.

In general, it may be stated that the symptoms and signs of acute diverticulitis are practically identical with those of acute appendicitis in its various forms, the only difference being that the former occurs as [illegible] rule on the left rather than on the right side of [illegible] abdomen.

Sufficient data are not available to enable one to determine what percentage of inflamed diverticula actually perforate, and it is therefore not possible to state dogmatically whether a given case of acute diverticulitis with comparatively mild symptoms should be subjected to immediate operation or should be treated more conservatively. In my opinion, however, the clinical course of the disease is so similar to the various forms of acute appendicitis that the treatment should be the same. Certainly in all acute cases, with severe and progressive symptoms, safety lies in early operation. Had operation in the case reported been delayed, rupture would undoubtedly have taken place within twenty-four hours, and in all probability would have resulted in a rapidly spreading peritonitis.

Regarding the operative technic of the treatment of an inflamed or gangrenous diverticulum, my experience has been far too limited to lay down any hard and fast rules. In my judgment, however, if the diverticulum is small or attached to the bowel by a narrow pedicle, removal, with closure of the intestinal wound by a purse-string or several Lembert sutures, would be indicated, providing the surrounding intestinal wall was not too much infiltrated. In the event of the diverticulum being large, attached by a broad base, or covered by a plexus of enlarged vessels, the safest method, in my opinion, would be the one employed in the case reported, that is, extraperitoneal drainage. If the situation of the lesion is such that extraperitoneal treatment can not be carried out, I suggest packing with gauze, from the abdominal wound to the lesion, leaving this packing in place from forty-eight to seventy-two hours, or until firm adhesions have formed about the gauze column; then removal of the gauze and free opening of the abscess, allowing it to drain through the channel thus formed.

If rupture has already occurred the intestinal wound should be united by suture, if this is possible; if not, adequate drainage should be provided.

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DISCUSSION.

Dr. D. N. Eisendrath, Chicago: This left-sided affection of the abdomen is one that must be considered in the future differential diagnosis of abdominal conditions, and it is necessary to have a clear conception not only of the acute forms of this disease, but of the chronic forms as well. Up to the present time there have been comparatively few cases of diverticulitis reported, either acute or chronic. In a recent number of the London *Lancet* one of the most thorough articles on the subject appeared by Cullen, who collected reports of 105 cases of all clinical varieties of this disease. I believe that in a few years we shall find that it is a comparatively frequent affection of the abdomen.

I had almost forgotten up to the time of seeing Dr. Brewer's first paper a case of my own which has never been published. The patient was a clerk, about 42 years of age, whom I did not see until symptoms of peritonitis were well advanced. My first thought was of appendicitis as the cause, but when the abdomen was opened the appendix was found to be normal. On the left side we found in the sigmoid region a perforated appendix epiploica, undoubtedly the cause of the trouble. Eighteen such cases of peritonitis following ruptured diverticulitis have been reported.

The chronic forms of the disease are beginning to explain many hitherto obscure abdominal lesions. One form is due to connective tissue formation, a chronic proliferative inflammation in the submucous and serous coats producing intestinal stenosis. This may give rise to symptoms of chronic or acute obstruction whose pathology would never be clear unless we understood the subject of diverticulitis. A second way in which the symptoms differ from those of chronic appendicitis is in the formation of enteroliths simultaneously in large numbers of these diverticula. For example, a man 78 years of age had a herniotomy. In the sac lay the sigmoid, which was filled with a large number of enteroliths, each in a diverticulum.

The adhesions formed in the chronic diverticula result in a series of pathologic changes, such as obstruction of the intestines due to changes in these diverticula. The etiology of these so-called vesico-enteric fistulæ was very obscure until it was found that they were caused by adhesions of these diverticula to the bladder, with subsequent perforation. With the information thus gained we have been able to operate on a very large number of cases. The interesting feature in these chronic forms of diverticula is the resemblance of these proliferative forms to carcinoma. There is no doubt that many cases in which a diagnosis of carcinoma of the sigmoid was made were in reality cases of chronic diverticulitis with stenosis.

Dr. P. E. Truesdale, Fall River, Mass.: I present a few cases to suggest the use of the colon bacillus vaccine in abdominal operations when this organism is or may become a factor in an infectious process. In operations on the large bowel, as you know, the best results are attained by first emptying the colon, then allowing it to remain in a condition of absolute rest for at least twelve hours before operative intervention is done; this with a view to eliminating the number and activity of the colon bacilli. In addition an immunizing dose of stock vaccine should be given.

A woman, aged 24, was operated on for a tumor in the lower abdomen. A multilocular cyst was found. Everywhere adherent to the omentum were the large and small intestines, and an examination of the under side of the tumor revealed a papilliferous degeneration in union with the sigmoid. For an area involving one-half of the tumor circumference and about four inches of its length all the layers of the intestinal wall had sloughed away. Liquid feces escaped into the field of operation.

In the midst of this infected area it was deemed unsafe to make an anastomosis, so that a muscle-splitting incision was made in the left side, the ruptured sigmoid was clamped at either end, drawn through this incision and sutured to the skin. The main tumor was then removed, the peritoneal cavity wiped out and the incision closed, leaving a drain in the pelvis. On the following day it was early apparent that there was an active infection in the median incision and the colostomy wound and that no ordinary means of local treatment could control the infectious process. The case seemed hopeless and the vaccines were tried as a last resort. I believe that they turned the tide in favor of recovery.

The second case was that of a school teacher, aged 21, with symptoms of pelvic disease. At the operation a large tuberculous pelvic abscess was discovered and removed. No opening of the rectum was discovered at this time, but after operation, when the patient was given salt solution, it came through the drain on the abdominal dressing, mixed with fecal matter. The wound soon showed evidence of infection and began to break down. The vaccine was administered, 0.25 c.c. for the first dose. Soon after the appearance of the wound changed and a cleaner process of healing was evident. The culture from the discharge showed *Bacillus coli* and *Staphylococcus aureus*.

The third patient, also a school teacher, aged 51 was operated on for peritonitis believed to be due to a ruptured appendix. At the operation general peritonitis was discovered. The appendix was normal. There were a few adhesions around the gall bladder; a small gallstone had escaped; the gall bladder was perforated near its base, and mucopus was escaping. The gall bladder was extirpated, a drain placed in the wound and in the pelvis, the patient put to bed and given 0.25 c.c. of colon bacillus vaccine. A culture was taken from the gall bladder and from the fluid, which proved to be a pure culture of colon bacilli. Convalescence progressed uneventfully and all symptoms of peritonitis disappeared in the subsequent twenty-four hours. There was then a slight rise in the temperature. The vaccine was administered, 0.5 c.c., and the course of the temperature changed.

The results in these cases are encouraging. If we accept the opsonic theory on which the vaccine therapy has been laid down by Wright and others, and we find that a specific organism is the common cause of infection in the bile ducts and pancreas, we are thereby in a position to treat these cases on more scientific principles. The acute infectious cases may, at least, be given trial doses of vaccine, for this does no harm, and if by its action we can control the acute process these patients may be operated on during the interval. So, too, in operations on the large intestine, where the colon bacillus is ever present, by immunizing the patient before operation, the scope of the surgeon may be greatly increased and his results as greatly enhanced.

Dr. L. L. McArthur, Chicago: The *Staphylococcus aureus* and the colon bacillus are the two organisms which show a very pronounced effect when used as a vaccine, and Dr. Truesdale's *suggestion to use them is excellent.*

INTESTINAL ANASTOMOSIS; PRESENTATION OF A NEW, SIMPLE AND ASEPTIC METHOD.*

FRANK B. WALKER, M.D.
DETROIT.

Ever since the memorable pioneer work of the late Dr. Nicholas Senn, intestinal surgery has been an attractive and fruitful field. During this brief period there have been proposed many ingenious methods of anastomosis and devices for their performance. Some of them have already become obsolete, while others are gradually being superseded by simpler means. The methods in vogue are serviceable in skilled hands, but are complicated and liable to sepsis or are incomplete. None has been stamped with unqualified approval. All except the McGraw elastic ligature are done on a wide-open gut and are essentially septic operations. The ligature method—the simplest and cleanest of all—does not complete the anastomosis for three or more days and is, therefore, incompetent for those cases in which another communication does not exist.

With the development of definite sutural methods there has arisen a disposition to discard contrivances as unnecessary if not also complicated. The Connell suture—the best representative of them—I have used in preference to all other methods, both sutural and instrumental, and taught to about six hundred graduate students. Although I have been able to adapt it readily to any form of anastomosis I observed that it was difficult for many to learn and for all to remember unless they were in constant practice. Except for the danger of sepsis from the open gut and the somewhat intricate suturing of the last part and tying of the last knot, I should regard it as ideal.

Ideal or physiologic anastomosis has been little sought. The possibility of doing the operation with safety and the advantage of this or that special technic have been reported and discussed frequently, but seldom have the principles of intestinal anastomosis been given adequate consideration. In my opinion, too much has been taken for granted. For instance, the conception of anastomosis not uncommonly held is the making of a communication merely between two attached viscera. It is true that result is accomplished, but that alone will not always fulfill the requirements. Intestinal anastomosis is purely a drainage operation, but to be of any value it must first of all be needed and in the second place unobstructed drainage must be obtained.

The conclusion jumped at, that gastrojejunostomy would cure atonic dilatation and prolapse of the stomach, because it would drain, and gastric or duodenal ulcer, because it would rest those parts, applied only to the result and not to the cause of disease, and it is, therefore, questionable whether gastroenterostomy be a curative or a palliative measure. This doubt is strengthened by reason of the facts that not only have the symptoms attendant on dilatation returned and ulcers reappeared lower down after apparent temporary relief, but it has been found in some cases that the anastomotic openings had healed shut. In other words, intestinal anastomosis, although inapplicable in some cases, had been employed as a makeshift instead of other more rational modes of treatment.

From the viewpoints of anatomy and physiology, the normal outlet of the stomach is by way of the pylorus. The stomach contents are propelled not by gravity, but by an inherent mechanism. If drainage be interfered with by some benign abnormality at or near the pylorus, the adoption of Nicoll's or Finney's or other possible pyloroplasty in preference to gastroenterostomy would conserve the *normal mechanism of drainage and* give promise of permanent relief. If, however, that passageway be permanently barred and another exit must be provided, gravity would come into play and indicate that the outlet should be situated, if possible, in the lowest convexity of the stomach and, on account of the to-and-fro movement, on the posterior rather than on the anterior surface. The exact point on the stomach longitudinally will depend somewhat on the case. It should be remembered, however, that, notwithstanding the change in shape and position of the organ in the empty and full conditions, the lowest convexity remains near the junction of the middle and right thirds of the greater curvature.

In cases in which anastomosis is performed without resection, it is essential that the communication between the afferent and efferent viscera be direct, and, therefore, that there be no kinking of the distal bowel either at the opening or lower down. Violation of this rule is doubtless responsible for the occurrence of the so-called vicious circle.

In the performance of posterior gastrojejunostomy it is a wise precaution to attach the jejunum firmly to the edges of the opening made in the transverse mesocolon. Failure to do so has been followed by a hernia into the lesser peritoneal cavity and intestinal obstruction.

If the intestine be resected and lateral anastomosis be performed, the stumps should be reasonably short and so attached, each to the other communicating bowel, as to preclude their intussusception. I have observed a long loose stump telescoped through itself into the intestine so far as to make a valvular closure of the anastomotic opening.

Besides promoting free drainage, the ideal method must be safe from sepsis and hemorrhage, simple of understanding and performance, complete in itself and applicable to all forms of anastomosis.

Sepsis is the most important factor to be contended with in intestinal anastomosis. The introduction of it from without can be controlled in this as well as in any other abdominal operation, but the possibility of infection from the open gut and of postoperative leakage is a constant menace. The danger from these sources can be minimized during the operation by walling off all the other structures with abundant sterile pads placed under and around the parts to be handled. Preoperative stomach washing, milking the intestine and the use of tapes and clamps to hold back the visceral contents serve their purposes, but an open bowel is unavoidable in carrying out any of the methods in vogue, except the elastic ligature, and is a serious defect.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

Postoperative leakage is usually due to the following three conditions: (1) imperfect serous apposition at the mesenteric space. (2) sutures too tightly drawn, (3) knotting a through suture on the serous surface.

Serous apposition of the viscera produces valvular approximation of the edges and effectually prevents the escape of bowel contents. This procedure has been adopted in all the methods that have proved successful. In end-to-end anastomosis especial care must be used to invert the mesentery with the intestine at the mesenteric space.

A continuous through mattress suture is preferable to the interrupted form, because it prevents overdistention of the bowel and separation of the edges during the period of healing, and it is more certain than the Lembert suture to close the cut ends of bleeding vessels and to control hemorrhage. It may be introduced and tied from the inside (Gregory Connell) or from the outside (Hayward Cushing). In simplicity and cleanliness the latter excels. A suture that is to be tied on the outer surface, however, should not be carried deeper than the submucous layer on account of the tendency to capillary action and seeping. No suture should be tied or drawn more tightly than is necessary to secure serous apposition. Otherwise the swelling of the tissues following operation may result in necrosis.

From a theoretical viewpoint, catgut would seem to be ideal suture material, but experience has taught that it softens and separates in the intestinal tissues too quickly to be reliable. Fine twisted silk and linen are safe and answer every purpose.

Almost any method becomes easy through practice, but no method will win universal favor that involves complicated technic or instruments or numerous assistants. A generally acceptable method must also be sur-

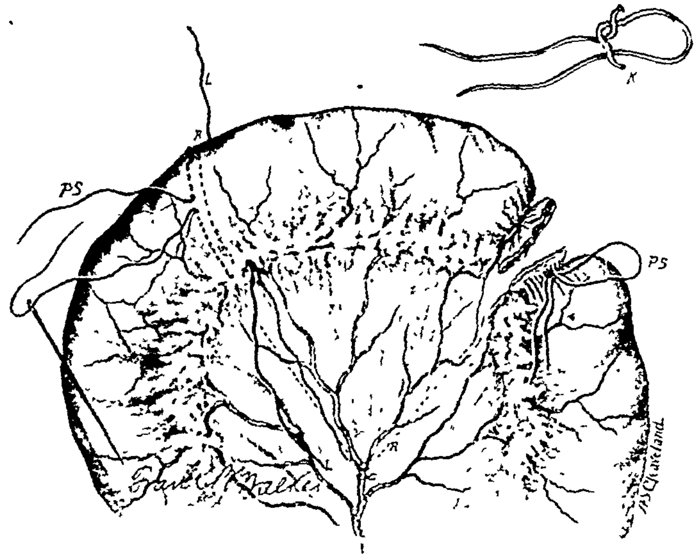

Fig. 1.—L, ligature; PS, purse-string suture; K, slip knot. The left side of Fig. 1 represents purse-string suture and ligature placed and ready for tying; the right side represents them tied and the gut cut across. In the upper right corner the slip knot is represented on a large scale.

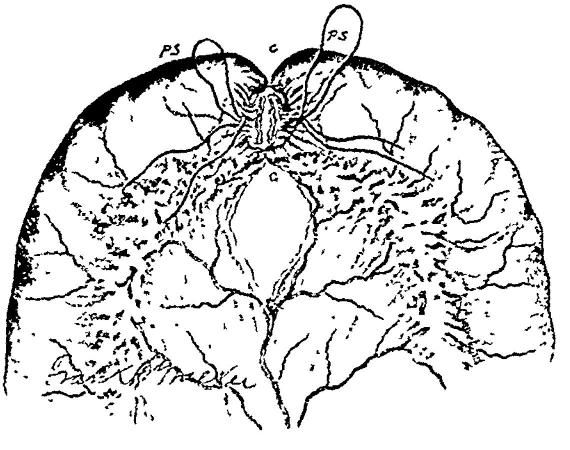

Fig. 2.—This represents the stumps closed by purse-string sutures tied with slip knots and held together by two guy mattress sutures (G).

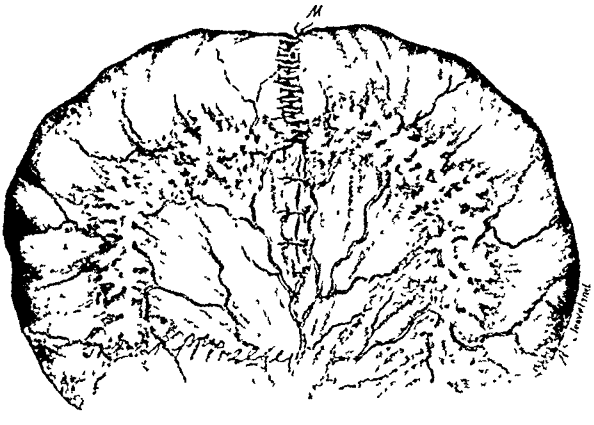

Fig. 3.—This represents the continuous mattress suture (M) placed but not drawn taut. The purse-string sutures have been withdrawn. The mesenteric gap has been closed by three sutures.

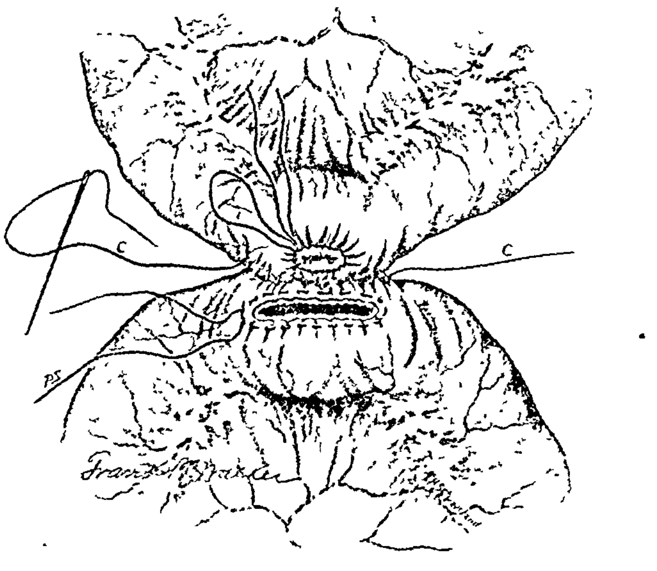

Fig. 4.—This represents two portions of intestine apposed and connected by a continuous mattress suture (C) through a short distance. In the lower gut a purse-string suture has been placed and the wall incised. In the upper gut the purse-string suture has been tied with a slip knot.

gically complete without the mediation of an uncertain hidden contrivance and must be adaptable in any emergency requiring anastomosis.

The method which I present here is not presumed to be a substitute for ignorance of surgical principles or carelessness in their practice, but it can be carried out by one pair of hands with scissors, needle and thread, and combines the advantages of other procedures without their defects. It is based on the closure of the gut during the operation by means of a removable purse-string suture, on serous apposition by a continuous through mattress suture inserted from the outside of the gut, and on the withdrawal of the purse-string suture after the suturing is completed, leaving an open lumen. The technic is shown in Figure 1, and is as follows:

For resection of intestine and mesentery as at R (Fig. 1), and end-to-end anastomosis, place ligatures (L) on healthy bowel proximally and distally beyond the part to be removed. Insert purse-string sutures (P. S.) about bowel one-half inch proximally and distally from ligatures (L) and tie with slip-knot (K), made by drawing only a part of one end of purse-string suture through knot. Ligate mesenteric vessels. With scissors cut across intestine close to purse-strings and divide mesentery as on dotted lines.

Bring the stumps of resected intestine together so that they shall correspond at mesenteric borders (Fig. 2). Place two or three guy mattress sutures (G) about one-eighth inch above purse-string sutures (P. S.) to hold the stumps temporarily in proper relation.

Begin continuous mattress suture (Fig. 3, M) at any point, except at mesenteric border, and with it encircle the bowel about one-quarter inch above purse-string sutures, passing from side to side six or seven times to the linear inch. The anastomotic suture should include the submucosa and may include the mucosa also, as a through suture does, except in that part of it which contains a knot. Extra care is necessary in placing the sutures evenly and in inverting the mesentery at mesenteric borders. The loops and ends of purse-strings project between the passes of the encircling suture until withdrawn. After the encircling suture has been placed around the bowel, drawn sufficiently taut and tied, the purse-strings are untied and withdrawn by pulling gently on their loose ends. The gap in the resected mesentery is closed by sutures or ligatures.

Theoretically, end-to-end anastomosis would seem to be more nearly ideal than the lateral form. It provides a more direct communication and conserves the function of the muscular mechanism of the intestine. It is impossible of adoption, however, in certain pyloric conditions as mentioned previously, and whenever the intestine is so small that inversion of the edges would make a diaphragm and closure of the lumen. In such cases, the lateral method has proved to be an excellent substitute. Moreover, it avoids the disadvantages of the mesenteric space. It is performed by the purse-string method as follows:

For lateral intestinal or gastrointestinal anastomosis bring the two viscera into the desired relation and place a continuous mattress suture (Fig. 4, C), connecting them through a length of from two to three inches, oval-shaped. Insert purse-string suture (P. S.) into each viscus one-quarter inch distant from and parallel to the continuous mattress suture (C). The purse-string sutures should be one-half inch shorter than the surrounding suture. With scissors or knife incise visceral wall within purse-string, trimming out strip of mucosa if desired, tie purse-string suture with slip-knot and, after both viscera have been thus treated, complete surrounding suture (C). After the latter has been placed, drawn sufficiently taut and tied, the purse-string sutures are untied and withdrawn by pulling gently on their loose ends.

DISCUSSION.

Dr. F. Gregory Connell, Oshkosh, Wis.: Improvements on the present attempts at aseptic intestinal technic are demanded. Dr. Walker's method and those of Muskowicz, E. Wyllys Andrews and Parker and Kerr are similar in principle to that of an Italian, Parlavecchio, which was published in 1897. They allow of a comparative asepsis, and will emphasize the necessity of the greatest care in an effort to avoid unnecessary soiling of the peritoneum by intestinal contents. Practical methods of union may now be performed in a comparatively aseptic manner; but when not to do enterorrhaphy has not been emphasized. Breaks of continuity of the intestinal wall do not unequivocally demand immediate enterorrhaphy. The self-evident truth that a live patient with a fecal fistula is a more satisfactory result than is a corpse with a successful intestinal union, has occasionally been overlooked. Many points will have to be decided in the diagnosis before, during and after the operation, that if not judged correctly will render valueless a technically perfect enterorrhaphy, such as: When (in strangulation) to leave the bowel alone, or to perform enterectomy; when (in wounds) to perform simple enterorrhaphy, or resection; when (after enterectomy) to perform enterorrhaphy by end-to-end, end-to-side, or side-to-side union, or to establish an enterostomy; when (with stenosis) to do a resection, an anastomosis or an exclusion. To procure normal tissue, of which the blood supply is perfect, at the cut ends for suturing, it is sometimes necessary to remove apparently formidable lengths of intestine. Failure to secure such tissue is undoubtedly responsible for a large percentage of unsatisfactory results. To accomplish intestinal union the method of choice is that with needle and thread alone. A prime requirement of the suture is a secure stitch, holding the cut ends in sero-serous apposition, or apposition continuously around the entire line of union, to secure which caution must be exercised at the mesenteric junction, because of the triangular space between serosa and muscularis formed by the anatomic arrangement of the peritoneum which allows a longitudinal strip of the intestine at this point to be devoid of serosa. The perforating, or through-and-through suture has been generally adopted as the important, security-giving stitch. The use of a second row of stitches, including only the serosa and the muscularis, is at present looked on as merely a precautionary measure for the purpose of causing a broader sero-serous apposition and not to resist tension. Any stitch that enters the bowel lumen or comes into contact with the intestinal mucosa should be of non-absorbable material. This will remain in place until its usefulness is past, after which it will be eliminated into the intestinal current. Catgut, on the other hand, may be absorbed too rapidly. The secondary reinforcing sero-muscular stitch does not communicate with the lumen, and, therefore, may be of catgut. The time-saving feature and the hemostatic properties are perhaps the most important reasons why the continuous suture is employed more often than is the interrupted. Drainage will sometimes be necessary ofter enterorrhaphy, but not as often as in the past. The drain is to be placed adjacent to but not in contact with the line of visceral suturing.

Dr. A. J. Ochsner, Chicago: Dr. Walker's beautiful and ingenious operation must not mislead us into the idea that patients ordinarily die after intestinal operations because of the operation. They die because of the condition in which they are at the time they are operated on, or because of faulty surgical judgment. In intestinal operations, if the infection is still within the intestine, then death results from an unrecognized condition of the blood vessels. There is a thrombosis somewhere which results in a slough and kills the patient. Either the surgeon has not gone far enough beyond the seat of the disease or has traumatized the intestine, or has made the gross blunder of infecting the patient himself, which is practically a thing of the past among those who do intestinal surgery.

CARDIOSPASM,

WITH A REPORT OF FORTY CASES.

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The first series of cases of so-called idiopathic dilatation of the esophagus was collected by von Ziemssen and Zenker in 1878. The report was based mostly on postmortem findings, little being known of the history of the cases. For our knowledge of the symptomatology of the disease we are indebted to the writings of Lichenstein, von Strumpell, Meltzer, Rumpel, Kraus, Rosenheim, Fleiner, Ewald, Netter, Kelling, Einhorn, Martin, Oppler, Gottstein, Dauber, Zausch, Strauss, Lossen, Sippey, and others.

In 1904 Mikulicz estimated that 100 cases could be collected from literature. Since that time a number of cases have been reported, notably in German literature, and by Sippey, Lerche and Erdmann in this country. Gottstein, in Keene's "Surgery," states that 140 cases have so far been reported, and himself adds 25 more. This paper is based on 40 cases which have come under my observation. Eleven cases of this series were reported in a paper[1] read before the Minnesota State *Medical Society in June, 1906.*

The disease has been attributed to the following causes: first, primary cardiospasm (Meltzer); second, primary atony of the musculature of the esophagus (Rosenheim); third, simultaneous presence of cardiospasm and paralysis of the circular fibers of the esophagus, brought about by paralysis of the vagus (Kraus); fourth, congenital disposition (Fleiner, Zenker, Luschka and Sievers); fifth, primary esophagitis (Martin), and, sixth, kinking at the hiatus esophagi.

The unsatisfactory condition of our knowledge of the etiology of this disease is indicated by the variety of the titles under which the cases have been reported—idiopathic, fusiform, diffuse dilatation; dilatation without anatomical stenosis, etc.

Gottstein classifies motor disturbances of the esophagus as follows:

1. Hyperkinetic, in which spastic contractions of the muscle exceed the physiological normal.
2. Hypokinetic, in which there is an impairment of the normal muscular tone.

While it is probable that primary atony of the esophageal muscle rarely occurs, I doubt very much its being a frequent factor in the cases which have been reported under the headings, *idiopathic dilatation of the* esophagus, cardiospasm, etc. In the study of a considerable number of cases the almost invariable history of spasm at the onset, followed at a later period by the evidence of dilatation—that is, retention of food in the esophagus—is most convincing evidence that the spasm precedes the dilatation and that primary atony is relatively a rare condition. This conclusion is further borne out by the evidence of early muscular hypertrophy in nearly all cases which have come to postmortem; by the frequent observation of severe cardiospasm unaccompanied by dilatation of the esophagus, and by the good results which have followed forcible dilatation. The occasional case in which spasm can not be demonstrated does not exclude its being the primary factor. The spasm is in many cases periodic, and after dilatation takes place little if any more than the normal tone of the cardiac muscle is required to produce evidence of stenosis. Rosenheim, in support of the theory of primary atony, reports cases in which the food passed slowly through the esophagus, causing discomfort or pain, but he fails to show that these cases ever develop spasm at the cardia or dilatation of the esophagus.

The history, as given in Cases 11 and 24, suggests the possibility of dilatation almost from the onset. These histories date back eighteen and twenty-six years, and it is very probable that the more striking symptoms that came on with the dilatation overshadowed the early symptoms of spasm in the patient's memory. Severe spasm was present at the time these cases came under observation. Atony of the musculature of the entire gastrointestinal tract, without obstruction, is frequently observed, but it is almost invariably associated with other neurotic manifestations. There is no reason why spasm should exist in primary atony unless we accept Kraus' theory of a simultaneous atony and spasm from degenerative changes in the vagus. His theory rests on the finding of degenerated fibers in the vagus in one case which came to postmortem. His observations have not been confirmed.

The theory of congenital disposition is interesting but not susceptible of demonstration. That anlage may be a factor in some instances is suggested by the few rare cases reported as occurring congenitally or in early childhood (Luschka, Fleiner, Zenker, Gottstein). In six cases of this series sufficient angulation at the cardia was present to prevent the passage of a sound by the usual method. Whether this exaggeration of the normal obliquity of the insertion of the esophagus through the diaphragm is the cause of the spasm, or is a result, I am unable to state.

The cause of the spasm is largely speculative. A few cases have been reported associated with gross lesions of the esophagus, such as ulcers, fissures and small carcinoma in the cardia, carcinoma of the stomach, etc. We have seen three cases of carcinoma complicated by cardiospasm, and one case of hour-glass stomach due to syphilis with secondary cardiospasm. Esophagitis and ulcer of the esophageal wall not in close proximity to the cardia are to be looked on as secondary to cardiospasm and dilatation, not as primary factors. In the majority of cases, however, no such possible etiologic factors are to be found. Cardiospasm is not often present in inflammatory conditions of the esophagus which come under observation. Evidence of esophagitis previous to the onset of the cardiospasm could not be elicited from any of the cases. With three exceptions, none of the forty cases reported had neurasthenic symptoms. The age and sex of the patients may be seen by referring to the accompanying table. The average age at the onset is 29 years; twenty-two patients are females, eighteen males.

Deglutition is a complicated, reflex act in which many muscles cooperate. Without entering into a discussion of the exact part played by each, it may be stated that food is carried from the mouth into the esophagus by the omohyoids, hyoglossi, pharyngeal and associated muscles. In the upper portion of the tube the bolus is rapidly carried down by the cross-striated muscles of its walls; in the lower portion it is moved more slowly by the peristalsis of the smooth muscle fibers. The cardia is supplied through the vagus with both dilating and contracting fibers, presided over and controlled by the medulla (von Operchowski). The normal action of this mechanism is but imperfectly understood, and even less is known of its disturbances in cardiospasm. The cardia is normally closed by contraction of its sphincter muscle, and is opened by its dilator nerves, and the bolus of food is pushed into the stomach by the peristalsis of the esophagus. Authors differ as to the way in which liquid food is carried along the esophagus. According to Cannon, Meltzer and Moser, liquids are carried deep into the esophagus or to the cardia by the forcible contraction of the omohyoids and associated muscles. Schrieber says that liquids are moved down the esophagus by peristalsis. Be this as it may, the esophagus is unable to force liquids and solids past an obstructed cardia with equal facility. After dilatation takes place the bolus of solid food is carried forward in a normal manner as far as the upper end of the dilatation. At this point the peristaltic contraction ring ceases to exert any direct force on the bolus, but sweeps around it.

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[1] Northwestern Lancet, September, 1906.

Food is propelled from the dilated esophagus into the stomach by two forces, gravity and increased esophageal pressure. The force exerted by gravity equals the height of the column of liquid food in the esophagus. The intraesophageal pressure is raised above the normal by those forces which raise intrathoracic pressure, and by crowding more food into the partially filled dilatation. At each act of deglutition sufficient food is ejected into the stomach to lower the intraesophageal pressure to a point where it is no longer sufficient to overcome the resistance offered by the spastic cardia. Little, if any, more than the normal cardiac tone is required to cause the retention of food in the esophagus. These points are well illustrated by Cases 35 and 37. Each patient had learned to take sufficient food to maintain a fair state of nutrition, by first swallowing solid food to the point where he was conscious that more would be regurgitated; then at the end of inspiration several swallows of fluid were rapidly and forcibly thrown into the esophagus, thus using the pharynx and upper portion of the esophagus much like the pump of a hydraulic press. The patient in Case 37 has acquired to a nicety the ability to practice this act. She stated that very rarely, if ever, during the last few years of her trouble had any food been regurgitated. During the period in which she was under examination, previous to dilating the cardia, from four to twelve ounces of food could be withdrawn from the dilated esophagus five hours after eating.

In the development of cardiospasm three stages, more or less clearly defined, may be recognized in the clinical histories.

1. In this stage the peristaltic contraction of the esophagus is sufficient to force the food through the spastic cardia. This is characterized clinically by the complaint of discomfort, pain, choking sensation, etc.

2. The peristaltic force of the esophageal muscle is no longer able to overcome the resistance of the contracted cardia, and the food is immediately regurgitated. This may result from an actual or relative increase in the obstruction at the cardia; that is, the spasm may become accentuated or the esophageal muscle may tire under the unusual load. In some cases the spasm is sufficiently severe from the onset to cause the immediate regurgitation of food. As a rule the spasm is, during the early part of the history, periodic; but as the condition develops mild spasm becomes more continuous or constant. Marked exacerbations in the spasm characterize the entire course of the disease. The increased work of forcing the food past the contracted cardia results in an early hypertrophy of the esophageal musculature. As the spasm increases in severity the esophphagus becomes less and less able to overcome the obstruction, and atony and dilatation result.

3. Once the esophagus begins to give way the dilatation is rapid. This stage is characterized clinically by the retention of food in the esophagus and its regurgitation at irregular intervals after ingestion. If the spasm is mild for a sufficient length of time from the onset, the hypertrophy may become extreme and dilatation not take place or be delayed for years. The hypertrophy, after becoming well developed, may overcome a most marked resistance at the cardia. Relatively frequent severe spasm at the onset may lead to early dilatation before hypertrophy of the esophagus has time to develop. An impaired tone in the esophageal muscle at the onset of the trouble may also have something to do with the rapid early dilatation that takes place in some cases.

The symptom-complex in cardiospasm is as a rule almost pathognomonic. It may be divided into the three stages noted in considering its development: first, cardiospasm without food regurgitation; second, cardiospasm with immediate food regurgitation; third, cardiospasm with dilated esophagus, the retention of food in the dilated portion and its regurgitation at irregular intervals after taking. In the majority of cases the first attack of spasm occurs suddenly and unexpectedly when the patient is at the table. A spasmodic, choking sensation is felt at some point in the course of the esophagus, generally located at the cardia and radiating to the back or neck. It is rarely described as a pain. Some patients locate the discomfort entirely in the epigastrium, left hypochondrium or in the upper portion of the esophagus. It may occur for months independent of the taking of food. In Case 40 many physicians had, during the course of twenty years, agreed with the patient in attributing the obstruction to an adenoma of the thyroid. The spasm is often described as a slight delay in the passage of food or the food "seems to stick beneath the lower sternum."

In the second stage the food is, after swallowing, immediately regurgitated. During the early portion of the history the attacks occur periodically, or mild spasm is continuous, with periods of marked exacerbation which are characteristic of the entire course of the disease. The patient in Case 9, in which the esophagus was not dilated, had periods of three to seven days in which all solid food was immediately regurgitated, alternating with periods of days or weeks of absolute freedom from dysphagia. In Cases 6, 27 and 28 the first attack of spasm was severe enough to cause immediate food regurgitation.

After dilatation of the esophagus takes place the spasmodic, choking sensation may be absent. The first portion of each meal is retained. After filling the sac, further food is regurgitated or forces the preceding portion into the stomach. Of the contents of the esophagus at the completion of a meal the more fluid portion may slowly seep through the cardia; the solid food with much mucus is either regurgitated at irregular intervals or remains in the sac until the next meal. Solid food, like meat, may be delayed at the cardia for several days, softer food in the meantime passing into the stomach. The sac is never completely emptied, several ounces of solid food often being present in the dilated esophagus when the patient states that it is going through all right. On many occasions I have withdrawn from two to sixteen ounces of food after twenty-four to thirty-six hours of fasting. That there is a sense of weight or discomfort in the chest, and that the food is not sour, are statements common to all cases. The vomiting is painless and but rarely accompanied by nausea. Some insist that the food enters the stomach but will not stay. The majority state that it lodges beneath the lower sternum. Ten cases of this series complained of waking at night to find the nasal passages filled with food.

Of this series, seven cases came under observation during the second stage and thirty-three during the third stage. Four cases of secondary cardiospasm are not included. Loss of weight was notable in the majority of the cases. A few maintained a fair degree of nutrition in spite of the dysphagia. Two of the cases in the second stage and ten of the cases in the third stage were markedly emaciated. The patients in Cases 10 and 41 could not walk without assistance, and the patients in Cases 22 and 42 were brought in on cots.

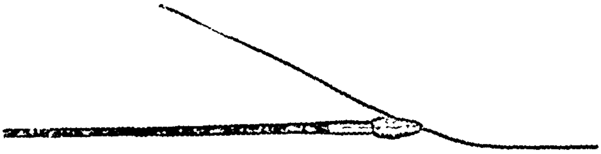

Fig 1. Whalebone staff with olive drilled for silk thread

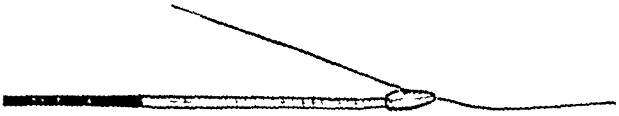

Fig. 2 Whalebone staff, spiral tip and olive

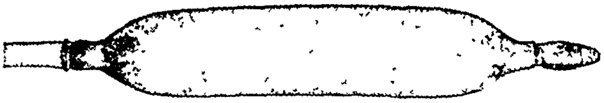

Fig. 3. Dilator

In the diagnosis and study of a case of cardiospasm the following points should be demonstrated:

1. The food is regurgitated from the esophagus and not from the stomach.
2. The existence and character of obstruction at the cardia.
3. The presence or absence of esophageal dilatation and its shape, size, etc.
4. The presence or absence of gross lesions in the esophagus or neighboring organs which might excite the cardiospasm.

In the demonstration of these points the following measures have been resorted to:

1. The various stomach-tube tests, including the methods proposed by Rumpel, Kelling and Einhorn.
2. Passage of a bulbous sound on a whalebone staff.
3. The passage of the sound which I have devised.
4. Radiographing a bismuth mixture in the dilated esophagus.
5. Determination of the size of the dilatation, by means of a rubber balloon distended within the esophagus.
6. Esophagoscopic examination.

Each case is given a test meal. If sufficient obstruction exists to prevent the food from entering the stomach, it is given with a tube; a second portion of the meal is given in the usual way. At the end of an hour the tube is again introduced and the stomach contents obtained. The tube is now withdrawn into the esophagus, the contents obtained, and the two portions are analyzed. The esophageal contents in all cases were alkaline or neutral in reaction. In the analysis of the stomach contents no marked variations from the normal were noted. The average acidity was below normal; a high acid content was present in a few cases. In all except Cases 7, 13, 17, 18, 30, 39 and 43 (second stage) food was present in the esophagus. On many occasions several ounces of food were withdrawn from the sac after twenty-four hours of fasting. In nearly every instance when a tube was passed during a remission in the complaint, and the patient stated that the food was going through all right, small or even large amounts of food were found in the esophagus. The simple introduction of a tube usually causes the regurgitation of non-acid food, which comes up in a manner that leaves little doubt of its source. In eight cases it was possible to pass a tube in the ordinary manner; in sixteen cases, with a wire stylet or a staff and olive: in ten cases by means of a silk thread and a whalebone staff: in six cases by means of a silk thread, staff and spiral tip referred to later. The more complicated tests of Rumpel,

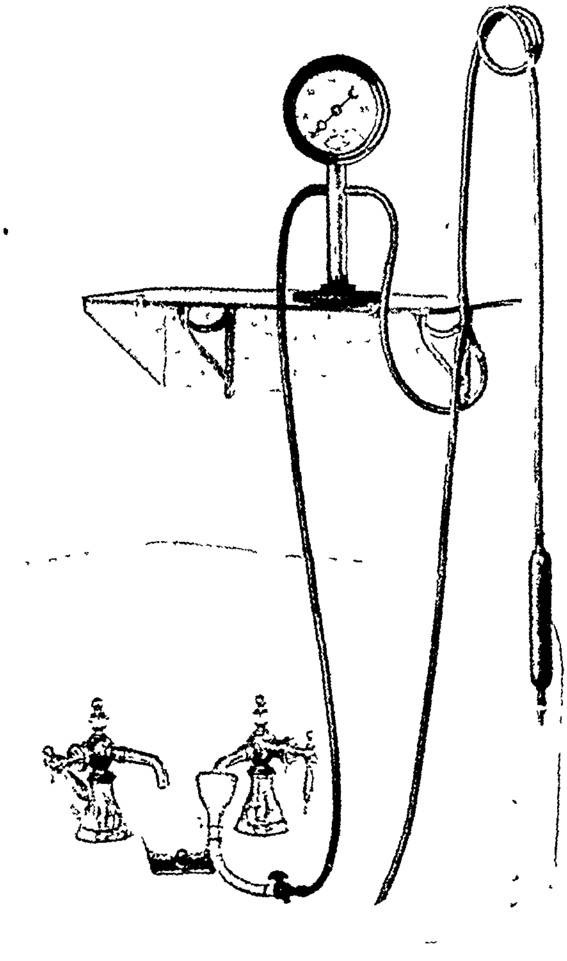

Fig 4 Dilator, showing arrangement of tubing

Einhorn and Kelling were frequently resorted to, but are unnecessary and often unsatisfactory.

The failure to pass a stomach tube when an olive readily passes the cardia is at once suggestive of cardiospasm. In thirty cases the passage of a 15 mm. olive was possible without encountering any marked obstruction. In ten cases it was impossible to pass the bulb, at least without using greater force than I considered safe. In these cases the sound was passed on a silk thread as a guide. The patient slowly swallows six yards of silk thread. This passes down through a sufficient number of coils of intestine to prevent its withdrawal on being pulled taut. It is advisable to have the patient swallow three yards in the afternoon and the remaining three yards on the following morning. In this manner the first portion forms a snarl in the esophagus or stomach, which passes out into the intestine during the night, the remaining portion passing without snarling. The olives are drilled for threading from the tip to one side of the base. With five exceptions, no difficulty was experienced in passing a 15 mm. olive when using the silk thread as a guide. As a rule a slight increase in the resistance was encountered at the cardia, but frequently the olive passed without its detection. Rarely was that slow giving way at the cardia, frequently described by authors, encountered when the sound was passed on the thread. It can at least be stated that marked resistance to the passage of a sound in cardiospasm does not often exist, provided it enters the cardia directly. Obstruction sufficient to prevent the passage of a sound is due to its being caught by contact with the bottom of the sac; and the sense of the slow giving way of the cardia under gentle pressure is due to the resistance encountered in sliding the olive along the flaring wall of the esophagus or the straightening out of some fold just as it is about to enter the cardia. The character of the resistance met at the cardia with the knowledge obtainable only by passing the sound on a thread, that the sound is directly entering the cardiac orifice is of the utmost importance in the differential diagnosis of organic and spasmodic stricture at the cardia. In six cases, using a whalebone staff 3 mm. in diameter, I found it impossible to pass the sound. The patient in the first case encountered could take sufficient food to make it seem improbable that sufficient narrowing at the cardia could exist, either from cicatricial or spasmodic stricture, to prevent the passage of a 3 mm. olive. Only one conclusion was tenable, namely, that there must be some angulation or tortuosity present. I had the flexible tip shown in Fig. 2, made to screw on to the end of the whalebone staff. It is very flexible, but will not double on itself when subjected to a force that can be safely used in sounding. With this tip the 15 mm. olive readily passed the cardia in the six cases referred to.

Radiographs were made in all except Cases 1, 2, 3 and 4. Exposures were generally made after giving the patient two ounces of bismuth mixed with kumiss, mucilage of acacia, or starchy food. The greatest contrast was obtained by radiographing a rubber dam balloon, distended with the bismuth mixture, within the dilated esophagus. The dilated esophagus is most clearly shown by placing the tube and plate so that the rays penetrate in an oblique direction from the right anterior to the left posterior, thus throwing the shadow to the left of the spine on the plate. However, this distorts the shadow more than a picture taken directly anterioposteriorly. The shadows in all except Cases 7, 13, 17, 18, 20, 30 and 43 indicated dilatations which would hold from six to twenty ounces, and corresponded in size with the measurements obtained with my sound and by filling with water. In all but three cases the dilated esophagus was clearly shown and the position of the shadows and their shapes and relations to the surrounding parts were such that it would be almost impossible to mistake them. Radiographs showed the dilatation to be spindle-shape in 18 cases, cylindrical in 12 cases and pyriform in 3 cases.

The dilatations which were spindle-shaped had an S-like curve, the lower convexity being to the left and the upper convexity to the right. The dilatation almost uniformly extended as high as the third dorsal vertebra. In Case 5 the shadow extended from the cardia to the upper margin of the sternum and had an almost uniform diameter of two and three-fourths inches.

In Cases 7 to 40 the radiographic findings were confirmed by a method of sounding to which I first resorted in Case 7 to demonstrate the absence of dilatation. This sound is constructed the same as the Russell bag used for dilating the cardia. A rubber dam balloon is attached to the lower end of a stomach tube in such a manner that the tube is closed, and holes are punched in the tube so that its caliber communicates with the interior of the balloon. A spherical or oval silk bag 22 mm. in diameter is drawn over the balloon and fastened to the tube. This is introduced into the stomach with a whalebone staff and distended with water under sufficient pressure to make the stylet, tube and balloon form a solid sound. The sound is drawn up to locate the cardia, collapsed, drawn into the esophagus and distended. If, under distension, the sound can be moved freely up and down, it is withdrawn and the silk bag replaced by a larger one. In this way, by using a series of sounds of increasing size, the diameter of the esophagus at any point, and an approximate idea of the shape and size of an existing dilatation, may be obtained. The demonstration of a sac by this method is also proof that the sac is a dilatation and not a diverticulum, provided the sound is first introduced sufficiently far to give assurance that it has entered the stomach.

Strauss' method of measuring the capacity of the esophagus is more accurate and should be carried out in all cases for the purpose of determining the fate of the dilated esophagus after the cure of the cardiospasm. A rubber balloon is distended within the esophagus with air, and the amount of air measured as it is introduced.

To complete the diagnosis an esophagoscopic examination should be made. In addition to the catarrhal changes, evidence of muscular hypertrophy, ulcerations, scars, papillary excrescences, etc., may be noted. The cardia appears funnel-shaped or like a rosette. Fissures and ulcers at the cardia should be carefully watched for, as they may be looked upon as excitors of the spasm and require either preliminary treatment or additional care when dilating the cardia. The occlusion at the cardia is in many cases sufficient to prevent the passage of the instrument. This is due not so much to the strength of the spasm as to the impossibility of presenting the esophagoscope perpendicularly to the plane of the cardia. This difficulty may be overcome either by an esophagoscopic obturator, or, in some cases, by painting the cardia with a cocain solution.

The obturator is made of steel and tapered so that the flexible tip gradually merges into the rigid tube of the esophagoscope. The olive and cylindrical portion of the obturator are drilled so as to permit of passing it on a silk thread. This obturator in many cases very much facilitates the introduction of the instrument at the introitus.

Until recently the treatment of cardiospasm has consisted in such ineffectual measures as attention to the patient's general condition; fluid, non-irritating diet; effervescent drinks; bromids; the frequent passage of large sounds; and, as a last resort, gastrostomy. In the first four cases of our series gastrostomy was done. Three of the cases were operated on at St. Mary's Hospital for stenosis of the cardia. Its cause was unrecognized at the time, but in each instance the condition of the patient warranted a gastrostomy. After the operation, periods of feeding by the mouth alternated with periods of introducing food through the gastrostomy opening. In one case the patient completely recovered; two were finally lost sight of. Case 4 was afforded much relief for several years by the frequent passage of a large bougie. These cases are introduced into the series for future reference.

Mikulicz[2] reported that he had operated in four cases with apparent perfect success. A gastrostomy was done and under the control of two fingers a long, curved forceps, the blades covered with rubber, was worked into the cardia. The forceps was gradually opened until the maximum distance between the blades reached six or seven centimeters. Erdmann[3] reports one case entirely cured by this method, after an interval of twenty months. Case 8 of this series was completely relieved for four months by this operation. This major operation only is warranted provided the condition is serious and that equally good results can not be obtained by simpler means. Russell[4] was the first to report a sufficient series of cases to demonstrate the efficacy of dilating the cardia with a silk-covered rubber balloon. Four cases were completely cured, one was much improved, and one was not improved. About thirty cases have been reported as cured by this method.

The construction of the dilator as used in the cases here reported is readily seen from Figures 3 and 4. It is made by cementing a rubber dam balloon to one end of a piece of non-elastic rubber tubing in such a manner that the tube just passes through the balloon. A number of holes are so punched in the tubing that its lumen connects with the interior of the balloon. A sausage-shaped silk bag is drawn over the balloon to preserve its shape on distention. Several sizes, 10 cm. long and from 20 mm. to 40 mm. in diameter, are provided. A second rubber balloon is drawn over the instrument to facilitate its introduction. If the dilator is slightly constricted in its middle third, the tendency for it to slip into the stomach is lessened. Provision is made, for removing the staff to prevent its maceration when not in use. To avoid the annoyance incident to exchanging silk bags, it is well to have several dilators, only one staff being necessary. The metal tip of the staff is threaded for the set of olives used in sounding and for the spiral steel tip previously referred to. The dilator is connected by rubber tubing with a water-tap or pump. Into this tubing two hard-rubber T joints are inserted, one for an altitude gauge or manometer, and the other for a piece of tubing to permit draining the instrument without disconnecting at the tap, and for controlling the pressure. The position of the cardia having been previously determined, the dilator is introduced sufficiently far for the cardia to engage the balloon at its middle third. The instrument is firmly held with the right hand, the index finger resting against the teeth, to prevent the dilator being drawn into the stomach. The tap is now opened enough to fill the instrument and deliver a good stream through the tubing for drawing the instrument, but not to indicate any pressure. The pressure is now slowly raised by pinching the tube between the thumb and index finger of the left hand. Various pressure regulators have been used, but none give the absolute control which is possible with this simple device. The pressure is, up to a certain point, determined by the tolerance of the patient, as indicated by the pain caused at the moment of distention. It must be sufficient to paralyze the sphincter. If a pressure of 500 mm. will not accomplish this, the pain is discarded as a guide, and dilatation is carried out by the use of dilators of gradually increasing size, sufficient pressure being used to assure each size being distended to its maximum diameter at the cardia. The safety of this method of forcible dilatation is based on the assumption that there is a certain latitude in the size to which the cardia may be dilated between the points at which paralysis of the sphincter and rupture of the esophagus will occur.

Many of the cases are relieved by a pressure of from 50 mm. to 100 mm. The number of dilatations has ranged from one to five, with a few exceptions. In two cases, 7 and 13, in which dilatation of the esophagus was not present, the treatments were repeated respectively seven and eleven times. The cases in which angulation at the cardia was present required more forcible and a greater number of dilatations. Within four or five days after the first dilatation, some food begins to lodge in the esophagus. The first two or three treatments are repeated at intervals of three to four days. The case is not discharged until the esophagus is found free of food remnants at the end of ten days. In the early cases which recurred, this rule was not carried out.

If a fissure is known to exist at the cardia, or if the patient is greatly emaciated, or if severe pain is caused by dilating, an attempt to carry the dilatation hurriedly to the point of giving relief should be avoided, and a pressure of only five or six feet of water employed. This will give relief for a few days at a time, and allow the healing of a fissure or ulcer. Later, the dilatation can be carried to the point of producing sufficient paralysis to effect a permanent cure.

In those cases in which the olive can be passed through the cardia, the dilator enters with equal facility. In those cases in which difficulty was encountered, it was overcome by the same methods which were used in passing the bulbous sound. In the recent cases I have invariably used the silk thread, as it makes the passage of the instrument more rapid, safe and certain.

In two cases of long standing cardiospasm without dilatation, it was some time before I succeeded in dilating the esophagus or recognizing the cause of failure. In these cases the upper portion of the dilator can not fully expand, and hence the portion within the stomach acts as an expanding wedge, drawing the instrument down. If the staff is firmly held against the incisor teeth, the diaphragm is drawn up to its limit and the cardia then dilated.

The immediate results are most striking. The patients are almost invariably able to take any kind of food at the following meal. There is often a complaint of soreness for the first twenty-four hours. The gain in weight and strength is rapid; even in those cases which were apparently well nourished there has been a gain in weight from ten to forty pounds. Attention is called to the tabulated history in which the number of treatments and recurrences may be noted. In 29 cases there has been no recurrence. Marked return of the symptoms has not occurred in any case as all were cautioned to return on the slightest evidence of trouble. That the disturbance has recurred in so few cases has been a constant source of surprise. Among those more recently treated there will undoubtedly be some recurrence, but I think that recurrences will be rare in the cases which have remained free from trouble for two years or more. The cases which I have had opportunity to examine at some time after treatment show that there is a tendency for the dilated esophagus to return to its normal size. As far as possible these cases will be followed up and the ultimate results reported.

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[2] Deutsch med Wchnschr., January and February, 1904.
[3] Ann. Surg., February, 1906
[4] Brit. Med. Jour., June 4, 1898.

TABULATED REPORT OF FORTY CASES OF CARDIOSPASM.

Case Number.	Sex.	Age.	Stage.	Duration, Years.	Date First Treatment.	Number Treatments.	Date, Recur. and Treat.	Number Treatments.	Second Recurrence.
5	F.	58	3	5	2- 6-06	3	0	..	..
6	M.	18	3	⅓	1-20-06	6	7- 6-06	4	0
7	M.	29	2	3	1- 9-06	6	7- 8-06	3	0
8	F.	21	3	3	2-28-06	3	8- 1-06	2	?
9	F.	30	3	3	5-12-06	2	0	..	..
10	M.	40	3	5	6-30-06	3	0	..	..
11	M.	30	3	18	6-30-06	10	10-27-06	8	0
12	M.	32	3	5	8- 2-06	6	0	0	0
13	M.	33	2	3	8-17-06	10	0	0	0
14	F.	41	3	20	9-20-06	3	0	..	..
15	M.	37	3	5	11- 1-06	7	0	..	..
16	F.	24	3	8	11- 3-06	6	0	..	..
17	F.	40	2	2	2-20-07	4	6- 3-06	2	..
18	F.	42	2	⅔	2-27-07	2	0	..	..
19	M.	27	3	7	3- 4-07	10	0	..	..
20	F.	25	2	1⅓	3- 9-07	3	0	..	..
21	F.	57	3	2	3-18-07	5	0	..	..
22	F.	38	3	3	3-20-07	2	0	..	..
23	F.	34	3	2	3-29-07	4	0	..	..
24	F.	41	8	26	4-20-07	4	7- 3-07	3	0
25	M.	38	3	7	4-25-07	6	0	..	..
26	M.	29	3	15	4-28-07	8	10-27-07	3	0
27	M.	29	3	2	5-15-07	7	8- 3-07	3	0
28	M.	21	3	6	5-15-07	5	11-11-07	3	..
29	F.	31	3	4	6- 5-07	10	0	..	..
30	M.	38	2	2	6- 8-07	6	0	..	..
31	M.	33	3	1½	7-19-07	5	0	..	..
32	F.	18	3	3	9- 6-07	10	1- 8-08	4	..
33	M.	46	3	12	9-10-07	6	0	..	..
34	F.	38	3	2	10-13-07	6	1- 3-08	3	..
35	F.	32	3	7	10-13-07	3	0	..	..
36	F.	34	3	9	10-19-07	5	0	..	..
37	F.	21	3	3	10-26-07	2	0	..	..
38	M.	47	3	2	12-23-07	3	0	..	..
39	F.	17	2	1	1- 3-08	4	0	..	..
40	F.	62	3	20	1- 6-08	4	0	..	..
41	F.	38	3	6	2- 2-08	5	0	..	..
42	M.	59	3	15	2- 5-08	2	0	..	..
43	M.	19	2	4	2-10-08	3	0	..	..
44	F.	38	3	3	3- 6-08	2	0	..	..

Negri Cell Inclusions in the Salivary Glands.—*Hoen, in the Bulletin of the University College of Medicine*, Richmond, Va., July, calls attention to the demonstration of the Negri cell inclusions in the secreting cells of the salivary glands (parotid) by a special combination stain of hematoxylin, fuchsin, ammonium picrate and gram. While priority of discovery is always of interest, as indicating the investigative trend of any laboratory, it is of minor importance when compared to the significance of the finding of structures, in the organs furnishing the infectious fluid, which are identical, morphologically, with those found in the brains of rabid animals. This discovery practically validates the assumption of Dr. Negri that these bodies, named after him, are the etiologic factor of rabies.

A NEW TECHNIC FOR NEPHROPEXY.

ALEXANDER HUGH FERGUSON, M.D.
CHICAGO.

The purport of this short paper is to describe in as few words as possible the technic of a nephropexy which has satisfactorily suited my cases for more than three years. In the multiplicity of procedures practiced by surgeons and in the many relapses that occur some prominent internists find reasons to discontinue altogether operations for the relief of floating kidney. It is safe to assert that there is no drug or external support that cures a case of this order, while even the simplest fixation by operation relieves many of them. Since applying the technic here described there have been no recurrences.

Floating kidney is no longer a border line disease; it belongs to the field of surgery. A brief survey of its pathology is overwhelmingly convincing of the demands on surgery for its treatment.

Let me make it clear that a kidney should not be insulted by an operation simply because it is extensively floating. *I have in mind a case of twenty-five years* standing in which the kidneys can be easily made to cross the spinal column, but no operation has been advised for two reasons: 1, No distress is occasioned, and 2, no important urinary changes have arisen.

INDICATIONS FOR OPERATION.

A few of the pathologic indications for operations are:

1. Transitory hydronephrosis due to kinking or folding of a ureter and characterized by intermittent renal colic and other less prominent symptoms, such as an irregularity in the quantity and quality of the urine voided.

2. Chronic hydronephrosis with more or less atrophy of kidney tissue, following a more or less permanent obstruction to the urinary flow through the ureter. The kidney may now become fixed away from its normal site.

3. *Unilateral interstitial* nephritis not infrequently is caused by the kidney floating. The classic symptoms and signs are present, with constant aching and occasionally colic in the region of the wandering organ.

4. Acute torsion of the ureter, giving rise to great and constant pain with, of course, enlargement and tenderness of the floating kidney.

5. Acute infection of a hydronephrosis—inflammatory symptoms constitutionally, chill, rapid pulse, fever, colic, pyuria, etc.

6. Suppression of urine in a floating kidney with Dietl's crisis bespeaks a condition that should be relieved by operation.

The above mentioned conditions give rise to many local and remote disturbances. In addition to abnormal findings in the urine, e. g., albumin, bile, blood, casts and pus, we often find the patient suffering with painful and frequent micturition; or headache and symptoms of uremia; or gastrointestinal disturbances, dyspepsia, vomiting, abdominal distress, constipation, and even diarrhea.

AN ILLUSTRATIVE CASE.

The nervous condition known as neurasthenia is certainly not benefited by the presence of a floating kidney as a factor, if not in producing, certainly in perpetuating the nervousness when renal colic, etc., is present. Two years ago I fixed the right kidney in a neurasthenic young woman, spare, small and emaciated. In the region of the right kidney there was constant pain, magnified the moment her attention was drawn to it. The kidney was tender to the touch all the time whether her mind was on that region or not, and I could not push it into its normal fossa. There was albumin in the urine at all times, sometimes blood and casts. Indican in abnormal quantities was voided with it. Headache, vomiting, constipation, hyperesthesia of the skin over the abdomen, increased reflexes, suspicious mind and constant fault-finding were a few of her symptoms. Many of her symptoms fleeted irregularly and senselessly, but above all there were (with the floating kidney) three distinct permanent findings: 1, Marked tenderness over the appendix; 2, constant tenderness over the kidney, and 3, abnormal urine. On exposing the kidney and finding it in a position of semi-rotation, its pedicle twisted and the little fat around it firmly adherent to its surface, and its parenchyma in a condition of chronic interstitial nephritis, I was convinced that one etiologic factor of her neurasthenia was in our hands. Through the same incision I opened the peritoneal cavity and found and removed another cause of her neurasthenia in the shape of an appendix constricted at its base, dilated distally and full of foul material. She suffers no longer with her side or abdomen.

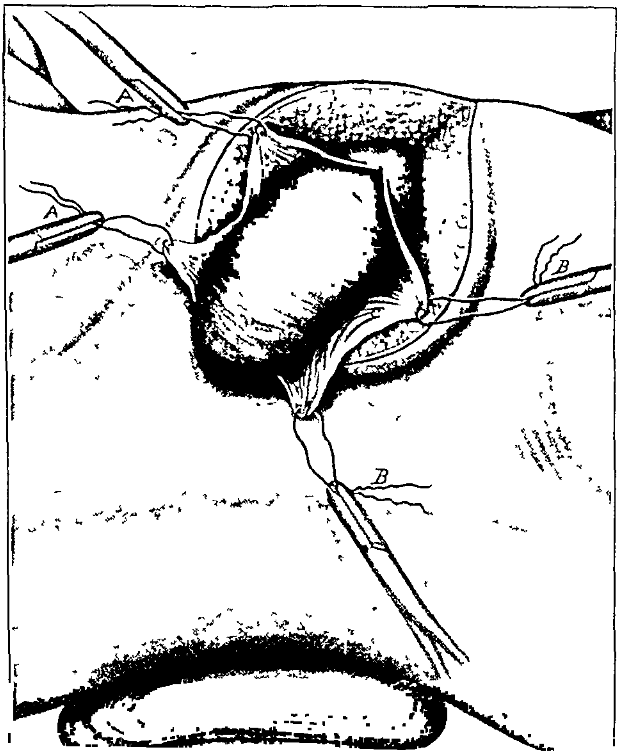

Fig. 1.—Preparing the kidney for fixation Fibrous capsule (C) split and sutures inserted into the anterior half (A, A) and posterior half (B, B).

OPERATIVE TECHNIC.

Prepare the patient for the operation by means of diaphoretics, diuretics and purgatives, and at the same time repleting the body with diluents. Anesthetize the subject, preferably with chloroform; elevate the lumbar region to be operated on, and clean the site of operation afresh with Harrington's solution; incise the skin, subcutaneous fat, and the muscles of this region down to the lumbar fascia, beginning the incision one inch below the tip of the twelfth rib and extending it the full length of the rib and parallel with it. Now, cut the presenting lumbar fascia obliquely below the twelfth intercostal nerves, which brings into sight the perirenal fatty capsule. Expose the kidney by vertically severing this fat. Deliver the kidney into the wound by the traction afforded by several artery forceps clamped on to the fatty capsule. This procedure is facilitated by ventral pressure. Place as much of the fatty capsule below the organ as is easily done where it may act as a support and a normal protection. Reform the normal bed of the kidney if it has been obliterated by fibrous adhesions. This is best accomplished by means of a gauze pledget, grasped by a long curved forceps, and forcibly separate the encroachments of the liver and diaphragm on the normal renal fossa. Posterior and lateral adhesions are cut if necessary. I consider the reestablishment of the renal fossa a technical advance and materially desirable to ensure a successful nephropexy.

To prepare the kidney for fixation, split the fibrous capsule over its convexity to within an inch or so of its lower pole and then peel it off the parenchyma of the organ, except at the lower end. Insert four catgut (No. 1, chromic) sutures, two to the anterior half (Fig. 1, A) and two to the posterior half (Fig. 1, B) of the capsule (Fig. 1, C). With a long, round, curved needle the anterior sutures are passed subcutaneously from within outward and above the twelfth rib, while the posterior sutures are made to penetrate all the structures posteriorly at the upper angle of the wound except the skin. Often two retention sutures are enough. Gently push the kidney into the bed prepared for it and pull on the sutures. The kidney must rest *in situ* without any tendency to displacement after these sutures are tied. Otherwise adhesions in the renal fossa have been overlooked or the fatty capsule has not been properly dealt with. When there is plenty of room the anterior suture or sutures may be fastened to the diaphragm.

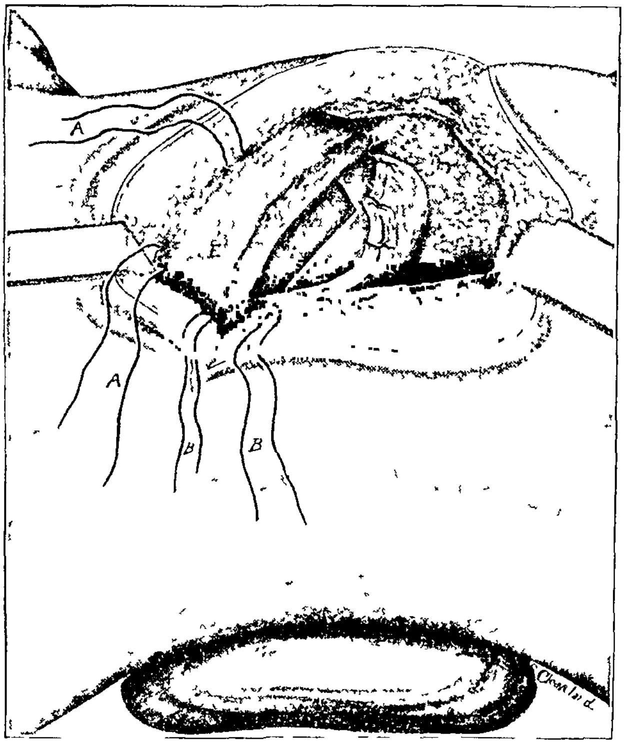

Fig. 2.—Broad thin flap raised from the anterior surface of the quadratus lumborum (D) sutured to the lower end of the kidney. A, A, anterior sutures; B, B, posterior sutures; C, C, capsule of kidney; D, twelfth rib; F, fatty capsule

In order to deepen the renal fossa and at the same time to support and fasten the lower end of the kidney, raise a broad thin flap from the anterior surface of the quadratus lumborum muscle and suture it to the lower end of the kidney (Fig. 2). The two nerves, iliohypogastric and ilio nguinal, are guarded from injury. Close the wound in the usual manner and leave room for a small cigarette drain at the upper angle of the wound.

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ULCER OF THE DUODENUM,

WITH REPORT OF TWO HUNDRED AND SEVENTY-TWO OPERATIONS.*

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The surgical invasion of the upper abdominal region has gradually enabled us to replace theory with facts, and fallacious clinical observations have given way before actual demonstration of diseased conditions.

One of the most striking illustrations of this newer knowledge is the discovery that three-fifths of all gastric and duodenal ulcers are situated in the duodenum. Until within recent years gastric ulcer has been considered the chief lesion, while reference to a duodenal location has been infrequent.

In a paper read before the American Surgical Association, May, 1904, I was able to report 58 operations for duodenal ulcer, which at that time was 27 per cent. of all the ulcers of the stomach and duodenum on which we had operated.

Two years later, in a paper read before the Surgical Section of the British Medical Association, August, 1906, on "Duodenal Ulcers," our statistics showed about 40 per cent. of ulcers in the duodenum. Since that time more careful investigation places the proportion at above 60 per cent.

In 1906-7 the total number of gastric and duodenal ulcers operated on by us (C. H. and W. J. Mayo) was 193. Of these, 119, or 61.7 per cent., were duodenal, 60, or 31 per cent., gastric, and 14, or 7.3 per cent. of the patients had a separate ulcer on the stomach and on the duodenum.

This does not prove that duodenal ulcers are more frequent now than in the past, but rather that they have been confused with gastric ulcer. In other words, we have in the majority of instances been talking about gastric ulcer, writing about gastric ulcer, and treating patients for gastric ulcer, when the trouble was primarily in the duodenum and not in the stomach.

There are several reasons why the facts in regard to the relative frequency of gastric and duodenal ulcer have not been brought to light. Until of late our most important source of information was derived from postmortem examinations, but such data are often misleading, since by the time the lesion had caused death terminal infections and secondary complications had so obscured the field that the situation of the ulcer could not be accurately determined and it was taken for granted that its location was in the stomach.

The greater number of patients with ulcer of the stomach and duodenum do not die from the disorder itself, but become a prey to intercurrent disease to which their underfeeding and consequent anemia renders them peculiarly liable.

In our earlier work even surgical exploration did not always reveal the truth, and often the location of the ulcer was not accurately established at the time of operation. This is accounted for by the fact that nearly all duodenal ulcers exist in the first inch and a half (ascending part) of the duodenum and more than one-half extend up to or within three-fourths of an inch of the pylorus, while 20 per cent. of them involve the margin of the stomach at the pyloric ring. Many duodenal ulcers, therefore, were formerly put down as pyloric and consequently classed with the gastric.

Differential diagnosis at the operating table between ulcers of the duodenum and those of the stomach near the pylorus may be difficult, but if careful search is made for the pyloric veins (Fig. 1), their exact location can be quickly detected.

Multiple ulcers of the stomach and duodenum are rare. In only 8.2 per cent. were there separate and distinct ulcers of each organ, although on the mucous membrane opposite an ulcer a second ulcer is often found at the point of contact, which we have, therefore, called the *contact ulcer.*

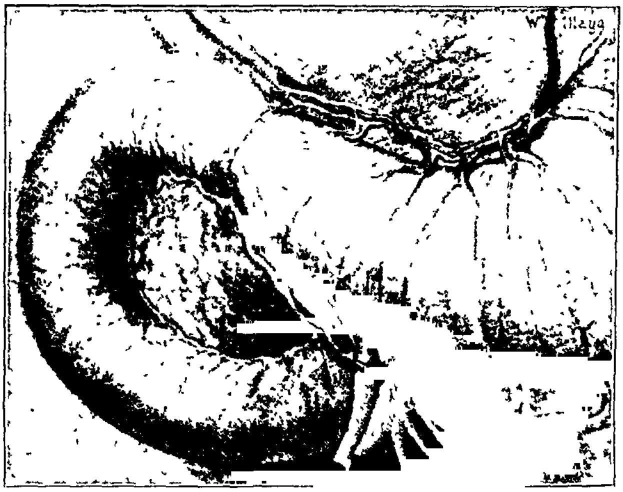

Fig. 1.—The anatomy of the duodenum with special reference (1) to the pyloric veins which accurately locate the pylorus; (2) note the light colored spot on the duodenum just below the pylorus, which may be mistaken for an ulcer when rendered anemic by traction; (3) crossing of the third portion of the duodenum by the superior mesenteric vessels

The total number of operations for duodenal ulcer is 272, made on 261 patients. Of these 77 per cent. were males and 23 per cent. females. The preponderance of male over female is hard to explain and is somewhat greater in duodenal than of gastric ulcers.

During 1906-7 60 patients with gastric ulcers were operated on, of whom 36, or 61 per cent., were males, and 24, or 39 per cent., females. In this connection it is worthy of note that, while nearly four patients out of five with duodenal ulcer were men, the opposite was true in gallstone disease, in which more than four out of five patients were women.

A somewhat careful examination of the living subject leads us to believe that, so far as duodenal ulcer is concerned, mechanics may play a part. The first, or ascending, portion of the duodenum in man seems to ascend a little higher than the average first portion in woman; consequently the alkaline, biliary and pancreatic secretions may rise higher and more readily neutralize the acid chyme in the first portion of the duodenum in women than in men.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

In an early state of fetal existence the duodenum above the common duct is a part of the pyloric end of the stomach. Coming from the primitive foregut, it is associated with the stomach in its physiology and pathology and is not a part of the small intestine, which comes from the midgut. The embryonic stomach is rotated on its right side, and its original posterior wall becomes the greater curvature. The primitive anterior wall, which has become the lesser curvature, retains its normal shape, but a pouch is formed by an expansion or dilation of the primitive posterior wall (greater curvature), and this becomes the fundus or storage end of the stomach. The pyloric end retains its intestine-like appearance but develops a high muscular potentiality. The embryonic duodenum is rotated about the head of the pancreas and becomes more or less fixed by the loss of some of its posterior peritoneum in the lower portion. The duodenum is U-shaped, with its concavity directed toward the left and upward. Its outlet is within an inch and a half of its pyloric entrance. The large caliber-fixed position and trap-like shape of the duodenum make it an admirable mixing receptacle, and syphonage plays almost as important a part as muscular action in emptying it.

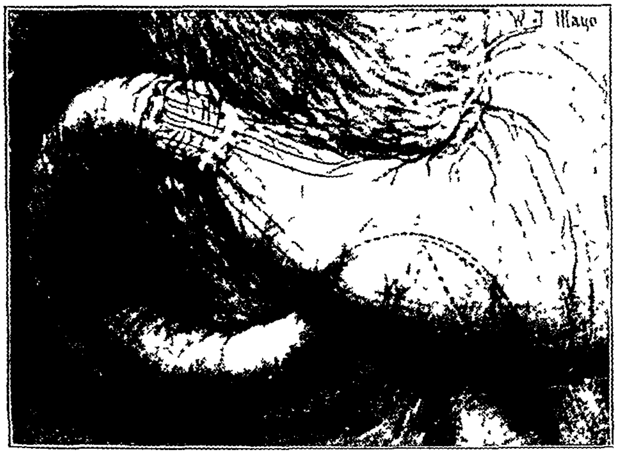

Fig. 2.—Ulcer of the duodenum with sutures in place for the purpose of enfolding. Posterior no-loop gastroenterostomy indicated.

In many animals the entrance to the pyloric end of the stomach is controlled by a true sphincter which does not exist in man, although physiologic contraction graphically marks its situation. The terminal three-fourths of an inch of the pyloric end of the stomach, the so-called "pyloric canal of Jonnesco," may be considered a part of the sphincter apparatus of the pylorus, serving as a passageway only. It is not subjected in the same manner to the traumatism and contact with acid gastric secretions which constitute so potent a factor in the production of ulcer both in the pyloric end of the stomach and the upper duodenum; therefore, primary ulcers in the pylorus and pyloric canal are rare.

Ninety per cent. of gastric ulcers are to be found in the pyloric end, which contains but one-sixth of the gastric mucosa, while the beginning of most duodenal ulcers will be detected at the point of impact where the acid chyme is forcibly ejected through the pylorus against the duodenal wall.

Physiologically the acid chyme in the pyloric end of the stomach stimulates the gastric motor and secretory functions. In the upper duodenum it controls the pyloric apparatus, and the rate of the gastric outflow is regulated by the rapidity with which this acidity is neutralized by the alkaline, biliary and pancreatic secretions.

Pathologically the acid stomach juices, either because of perverted secretion or through lack of local resistance, or both, become the most important factor in the development of ulcers, and largely confines their ravages to these two embryologically associated structures, the duodenum and the pyloric end of the stomach.

The first notable contribution to the subject of duodenal ulcer and its surgical treatment was the presidential address before the American Surgical Association in 1900 by Dr. Robert F. Weir. The total number of cases reported at that time was small, and nearly all of them were acute perforations into the free peritoneal cavity.

Perforation is comparatively common, but fortunately the contents of the duodenum are relatively sterile and small in amount, which favors plastic protection. In the 272 operations (up to June 1, 1908) perforation was found 66 times: 16 acute, with three deaths; 13 subacute, with abscess, no deaths, and 37 chronic protected, with one death.

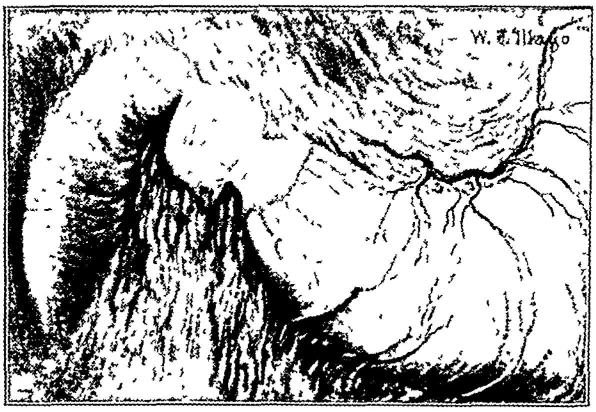

Fig 3.—Hour-glass duodenum which was treated by excision with end to-end union between the duodenum and the stomach.

Acute perforation of the duodenum is sometimes diagnosticated as perforative appendicitis, and, as remarked by Codman, it is probable that a number of such acute perforations are not differentiated even at the operating table, and a careful examination of the appendix in some cases of septic peritonitis from supposed appendiceal perforation would show that its peritoneal surface only was involved and that the lesion was in the duodenum.

Out of 27 cases of acute perforation of the stomach and duodenum in which we have operated, 16 were duodenal. In 3 suture of the opening and gastrojejunostomy was done, in 13 suture without gastrojejunostomy, and of these only one required secondary gastrojejunostomy. In addition, 12 subacute perforations were walled off with encapsulation of infected material which had escaped from the perforation and caused a secondary abscess to form, such as described by Lund. All but one of the patients with acute and subacute perforations have remained well, the perforation having seemingly put an end to the disease. In this one exception, although the ulcer was healed, a secondary obstruction rendered gastrojejunostomy necessary at a later period.

Acting on this observation, we have four times produced the condition of perforation by cutting out the crater of the ulcer and closing the defect by suture. The results have been good, but sufficient time has not elapsed to know if it will be permanent; but it is a much easier and safer operation than the excision of the entire indurated and cicatricial area about the ulcer which we have heretofore practiced. The extensive operation, however, would be indicated if there was any evidence of malignancy, which, as we have already pointed out, is less liable to take place in ulcer of the duodenum than in ulcer of the stomach.

Chronic protected perforation occurred 37 times. In the chronic form, unlike the acute form, incomplete perforations with adhesions protecting the base of the ulcer seemed to act as an aggravation to the condition, and recurring attacks of local peritonitis were the rule, often producing symptoms resembling those of gallstone disease, for which the manifestations were sometimes mistaken.

A marked peculiarity of duodenal ulcer is the periodicity of the attack, beginning as a rule in early adult life. The subject, usually a male, has an attack of stomach trouble, of which acidity is a prominent feature. This lasts a few days or weeks and is followed by an "almost well" periods of weeks or months. These symptoms recur with increasing frequency, the patient finding some relief from a restricted diet. In the later stages mechanical obstruction often appears. Hemorrhage occurs in about one-half of the cases.

A differential diagnosis between gastric and duodenal ulcer can usually be made. In duodenal ulcer the pain and tenderness, as a rule, extends from the mid-line to the right; aggravation induced by food comes on several hours after a meal, and the patients suffer from a peculiar "hunger pain" when fasting.

Unlike gastric ulcer, duodenal ulcer rarely undergoes carcinomatous degeneration. We have seen but four apparently primary carcinomas of the duodenum. In two of these the origin was uncertain; and in but one did it seem probable that the cancer had developed on ulcer. In five cases, however, we have known gastric cancer to develop on the edge of a duodenal ulcer which involved the stomach at the pyloric ring.

The surgical treatment of chronic duodenal ulcer will usually consist of gastrojejunostomy, preferably by the "no loop" method.

We have made 311 gastrojejunostomies for ulcer of the stomach and duodenum by this particular method, with a mortality of less than 1 per cent., and but three patients have required a secondary operation on the stomach or duodenum for any cause.

If the ulcer has caused hemorrhages we tie the blood vessels leading into it, and with sutures cover with sound tissue (Fig. 2). Should there appear to be any danger of perforation, the site of the ulcer is covered in the same manner as recommended by Mr. Moynihan, who calls attention to the possibility of secondary perforation.

In four cases we have excised the ulcer with direct union to the stomach. This did not prove a very satisfactory procedure, as in two of them we were compelled to do gastrojejunostomy later. In several of the cases, however, we were able to excise the ulcer and close by plastic repair after the Finney plan with good results.

In one case an obstructing ulcer of the duodenum an inch and a half below the pylorus so angulated the duodenum on itself that it was comparatively easy to do duodeno-duodenostomy between the first and second portions of the duodenum. Figure 3 is from a drawing of an hour-glass duodenum, the result of ulcer, which was cured by resection with end-to-end union.

In this connection I wish to again call attention to Figure 1. The arrangement of the blood vessels of the duodenum just below the pylorus are such that if the pyloric end of the stomach is pulled upward rather firmly, as one must often do to obtain a view of the parts, an anemic spot will appear in the duodenum just below the pyloric ring. This appearance is at times very striking and may closely resemble an ulcer. On one or two occasions we were obliged to incise the duodenum at this point before we could be certain that no ulcer existed. The tissues apparently involved are normal to the feel and do not have the milky appearance of the peritoneum of true ulcer, and there are neither adhesions nor other abnormality. If the traction is taken off, it will be seen at once that no ulcer exists.

There has been much discussion as to the curative value of operation for ulcer. From our own experience we can say that the surgical treatment has been most satisfactory. The small esteem in which surgery of the stomach and duodenum is held by many professional men, and the bad results reported, have been largely due to mistakes in diagnosis and unnecessary operations performed where no ulcer existed.

We have, as far as possible, traced our patients with duodenal ulcers operated on in 1906-7. These two years were chosen because this choice eliminated some of the early operations in which the diagnosis was doubtful and the technic imperfect, and it prevented the inclusion of the recent cases that the shortness of time since operation would render valueless to statistics from the standpoint of cure.

Of the 119 patients operated on in 1906-7, we have information of 106. Of these 87, or 82 per cent., were cured; 10, or 9.5 per cent., improved: and 6, or 5.7 per cent., unimproved, making cured and improved 91.5 per cent. The operative mortality in the whole number of cases was 2.8 per cent.

THE DIAGNOSIS AT OPERATION BETWEEN CHRONIC ULCER AND CANCER OF THE STOMACH.*

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BOSTON.

In my experience with gastric surgery, although not extensive, I have been confronted with difficulty in deciding in certain cases between the presence of benign and malignant disease, a decision so important and at the same time so difficult that the subject seemed to me worthy of consideration.

The past decade has been one of great activity in the surgery of the stomach. The work has been prosecuted with marked interest and zeal, and, on the whole, with commendable sanity and judgment. Nevertheless, it can not be denied that, as has been inevitable in any new department of surgical endeavor, we have had to feel our way by constant experiment and modification. Mistaken methods have been tried and found wanting; excellent procedures have been misapplied, and it is only recently that we have reached firm ground in such important points as the best method of gastroenterostomy and the technic of resection in cancer. There can be no doubt in the minds of those who have followed the work in this field closely that in the early days many operations were done which in the riper experience of the present day would not be deemed good judgment, that gastroenterostomy was done with poor results in such conditions as neurasthenia accompanying gastroptosis, in hemorrhage from medical (acute) ulcer, and other conditions, which experience has taught us to-day, are best not operated on. Medical or acute ulcer, with or without hemorrhage, ptosis attended by neurasthenia, and all non-obstructive lesions of the stomach, except chronic ulcer and cancer, have been practically eliminated from the surgery of that organ. Hour-glass stomach due to contraction of the scar of a chronic ulcer, or to adhesions, is, of course, classed among the obstructive *lesions*.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

British and American surgeons have contributed in no small degree to the rapid advancement of our knowledge of this subject, and among those who by example and precept have been foremost in this field I need only mention such names as those of Robson and Moynihan[1] in England, and the Mayos, Rodman, Finney[2] and Munro[3] in this country.

In regard to cancer of the stomach, there can be no doubt that in operable cases, which means those cases in which the growth with a fair margin of stomach and the involved glands can be removed, the only treatment which gives any promise of relief is in excision, and from my own experience, though small, I am glad to be able to corroborate the statement of Mayo that cancer of the stomach is as amenable to treatment as is cancer of the breast. It is not, however, with the plain unmistakable cancers of the stomach that I wish to deal in this paper, but with those cases—and they are not rare—in which even after all preliminary methods of diagnosis have been exhausted and with the abdomen opened and the ulcer under the eye and touch, we can not distinguish between a chronic ulcer and a cancer. If the treatment justified were in both conditions the same, the fact could make no difference. In fact, no less an authority than Finney makes the statement that in all operable chronic ulcers gastrectomy should be performed, owing to the fact that they are indistinguishable from cancers, and gastrectomy rather than local excision is the best treatment for chronic ulcer.[4]

Perhaps we may come to accede to this statement, in so far as it is applied to nonadherent ulcers so situated as to be easily excised, such, for instance, as saddle ulcers on the lesser curvature; but there is another class of cases, in chronic ulcers on the posterior surface and at the pylorus and extending into the duodenum, when the determination of malignancy is of greater importance. In fact, it seems to me that these cases fall into two distinct classes, namely, (a) saddle ulcers of the lesser curvature; and (b) ulcers at the pylorus extending onto or from the duodenum and adherent to liver or pancreas.

Cases of the second class are not inoperable, by which Dr. Finney evidently means incapable of excision, but their excision is difficult and attended by a risk which we should be willing to accept in cases of malignant disease but not in the treatment of simple ulcer, especially when we consider the many reported cases of simple ulcers in this situation cured by gastroenterostomy. Robson goes so far as to say that in adherent ulcers at the pylorus, even when they are greatly thickened and there is a suspicion of malignancy, gastroenterostomy should be performed, and he refers to a number of cases in his experience in which this procedure has proved curative. His experience is confirmed by many others.

Anatomic as well as clinical evidence of the cure of these patients is not wanting, from second laparotomies and occasionally from autopsy, as in Hoffmann's patient who died of strychnin poisoning two years after a gastroenterostomy for indurated ulcer at the pylorus, in which the autopsy showed a smooth scar, the ulcer having completely healed.

Höffmann,[5] however, while presenting the well-known advantages of gastroenterostomy over excision in most cases, states that if appearances at operation strongly suggest malignancy, resection should be done. He applies this statement to indurated ulcers, both at the pylorus and on the lesser curvature. He reports 52 cases of benign disease of the stomach from the Graz clinic.

Von Eiselsberg,[6] speaking of stenosis of the pylorus, advises gastroenterostomy, but admits that in many cases it is difficult to decide whether an ulcer or a carcinoma is present, and states that under these circumstances, if the patient is strong enough, excision should be done. He reports in this paper thirty-nine gastroenterostomies for benign pyloric stenosis with one death, and eleven resections for benign disease with two deaths.

Hochenegg (Schulz[7]) performed gastroenterostomy in two cases in case of doubt, one because the patient was in poor condition, the other because of adhesions. Both patients did well at first, but died within twelve months after operation, and in one an autopsy showed cancer developing on an ulcer base.

On two occasions, however, I have subjected patients with chronic ulcers at the pylorus and extending onto the duodenum to a difficult and tedious excision, only to find that the ulcers were non-malignant. Although both patients recovered, one died four months later from contraction of the new stoma, which, owing to the length and difficulty of the operation, had been made by a Murphy button; this length of the operation was partly due to the fact that the common duct was accidentally divided and had to be reimplanted in the duodenum. It is in this class of cases that laboratory studies are of greatest importance and therefore should always be made before operation. In these cases of adherent ulcer, in which the question of excision is a delicate one, the presence and amount of free hydrochloric acid may aid in the decision, and so far in my cases has proved a good guide.

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[1] Moynihan, B. G. A.: A Review of 59 Cases of Cancer of the Stomach Treated by Operation, Tr. Clin. Soc. Lond., 1906, xxxix, 84-95.

[2] Finney, J. M. T., and Friedenwald, I.: Unusual Case of Ulcer of the Stomach, Boston Med. and Surg. Jour., 1907, clvii, 393-395.

[3] End Results in Benign Lesions of the Stomach Surgically Treated, Am. Surg., 1907, xiv, 818-826.

[4] A parallel example of the induration due to chronic subperitoneal inflammation simulating malignancy may be found in those tumors of the cecum which by their stony hardness and appearance so simulate carcinomata, and which disappear so quickly after an inflamed appendix has been removed from among their adherent coils.

[5] Haben wir in Zukunft günstigere Resultate von der chirurgischen Behandlung des Magencarcinomes zu erwarten, und besteht ein Zusammenhang zwischen klinischer Krankheitsdauer, und Radikal operabilität? Mitt. a. d. Grenzgeb. d. Med. u. Chir., Gedenkband, v. Mikulicz, 1907, pp. 879-892.

[6] Die chirurgische Therapie des Magenulcus. Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1906, xvi, 1-18.

[7] Zur Statistik der Gastroenterostomien bei benignen Magenerkrankungen, Deutsch. Ztschr. f. Chir., 1906, lxxxviii, 494-552.

In regard to cases of the first class, the saddle ulcers of the lesser curvature, my experience has been different. A gastroenterostomy for a supposedly benign saddle ulcer of the lesser curvature failed to cure one of my patients, who gradually failed and died in a few months, probably from extension of a gastric cancer; and an excision in a similar case of a supposedly benign ulcer, which was subjected to an immediate microscopic examination, showed the presence of cancer and enabled a more extensive excision to be performed at once, with the gratifying recovery of the patient. An excision of a saddle ulcer of the lesser curvature with a wide margin of stomach with enlarged glands thought to be a cancer and therefore dealt with radically, resulted also favorably to the patient. Another patient, in the hands of a colleague, who came under my observation, and on whom a gastroenterostomy was performed for a supposedly benign ulcer of the lesser curvature, had a recurrence of symptoms a year or two later, and a second laparotomy disclosed a cancerous peritonitis.

Recently a patient on whom I performed a gastroenterostomy for a chronic saddle ulcer of the lesser curvature three years ago, excision being impracticable on account of adhesions to the liver, came to autopsy, and examination showed a cancer. In this case, undoubtedly, a cancer developed on an ulcer base, a condition to the frequency of which attention has been so often called in recent years by Mayo, Graham and others, and one which is a further argument for excision whenever possible. In these cases the presence or absence of hydrochloric acid has been an unsafe guide, and I believe these ulcers should all be excised, regardless of laboratory findings.

It is useless further to multiply examples which might demonstrate our inability to distinguish cancer from chronic ulcer. The practical questions for us are: First, how near can we come to a diagnosis and what aids can we summon before and during operation? Second, the aids failing us, how are we to proceed under the variable and deceptive conditions met with during operations? Partly on one's own experience, guided, of course, by the written and spoken advice of others of perhaps greater experience than one's self, but after all chiefly by one's own personal opinion, must the question in each case be settled. An attempt to formulate the principles which should guide us may well be prefaced by a brief statement of the clinical pathology of the disease.

With the superficial medical ulcer which involves the mucous membrane only, frequently bleeds and often is the cause of pain, but is curable under judicious rest and feeding, we have not to deal. Whether such an ulcer heals under medical treatment or becomes chronic, i. e., surgical, depends on whether sufficient rest can be given the ulcer without starving the patient and leaving the general nutrition so poor that the tissues can not heal. I may remark in passing that now that the long periods of rectal alimentation (essentially absolute starvation) in the treatment of this disease have been given up, a practice which often exhausted the patient to a point where the tissues were so devitalized that healing could hardly be expected, and feeding almost from the first has been adopted, we shall probably find fewer chronic or relapsing ulcers to operate on. Food which gives the maximum of nutrition with the minimum of work to the stomach we have learned may be given almost from the first, and with careful diet and supervision after the acute symptoms have disappeared and the patient discharged from the hospital, I believe we shall have less chronic ulcers develop. This is only one of the many beneficial results from the success in prescribing dietetic regimens which medical men are attaining, as the result of special attention and study, and which have already given such remarkable results in obesity, diabetes, etc.

To return, however, to the subject, the relapsing, chronic, or surgical ulcer invades the muscular layer of the stomach until a definite patch of varying size becomes converted into scar tissue, white, of stony hardness, and of varying thickness, according to the time it has existed. Such a scar has elevated indurated edges where the infiltrated, ulcerated mucous membrane surrounds it, the edges may be excavated, so that any one may be defied to tell by touch or inspection whether they are cancerous or not, and glands may be involved and also indurated, so as still further to simulate malignancy.

Of the two large saddle ulcers above referred to, which I excised and which looked almost exactly alike, one being simple and the other carcinomatous, the cancerous ulcer was the least indurated and least malignant looking of the two. Excision of a portion of the ulcer for pathologic examination is undesirable, because it complicates the technic, because of the time wasted in waiting for a report, and because of the danger in case of malignancy, of infecting the open wound with cancer cells.

Excision of the entire ulcer and immediate examination of the specimen may help, and, in fact, in my second case the report of cancer enabled a more extensive resection, with the happiest results. However, even this method may fail, for the pathologist may have to cut and examine several portions of ulcer before he arrives at a malignant part and the delay may be too great.

In doubtful cases two facts may help us: one, that cancer rarely starts from the duodenum, so that if the duodenum seems primarily involved the induration probably is benign; and second, that benign ulcer perforates early as compared with cancer. So that subacute perforation with adhesions to the liver or pancreas in a case early enough to be a doubtful one points toward benign disease. The very induration attending subacute perforation may be the reason for the simulation of malignancy, or, to put it differently, the very conditions which render excision difficult may point to its being unnecessary.

In the second group of cases mentioned above, in which I excised two moderately adherent ulcers of the pylorus and first part of the duodenum, the situation was as follows: The clinical evidence and laboratory tests, hyperacidity, presence of free hydrochloric acid, etc., pointed in both cases to chronic ulcer. The induration and thickening of the pylorus and first part of the duodenum was of such a character as to suggest malignancy. In one I had previously (four weeks before) performed a gastroenterostomy without relief and the growth had increased in size. I felt that both lesions were probably malignant and performed resections, made difficult and dangerous by pancreatic adhesions, only to have both reported benign. In the first case I should have allowed the facts that the clinical and laboratory tests pointed to a benign condition and that carcinoma of the stomach rarely arises from the duodenum influence me; and in the second case the same factors, plus the knowledge that the inefficiency of the gastroenterostomy was in part, because the lumen was too small or, in other words, a technical error. I performed Rodman's ideal operation, excision of the ulcer area, but in the presence of adhesions which made excision rather dangerous, and in the face of the fact that the very ulcers which are most amenable to healing under gastroenterostomy are those of the pylorus. I think under ordinary circumstances a gastroenterostomy is to be preferred in such situations.

I have performed seventeen gastroenterostomies for indurated thickened ulcer at the pylorus, some of which were bleeding freely at the time of operation, with one death and with uniformly good results in sixteen cases; and also on three ulcers at the lesser curvature adherent to the liver (perforated chronic ulcers), with permanent cure.

Of seven cancers of the stomach in which I have performed partial gastrectomy, two patients died as the result of the operation, one of the deaths occurring many years ago before I was acquainted with modern technic, and the other in a case in which an excision was undertaken in the presence of too great glandular involvement, after gastrectomy and enucleation of large masses of glands around the common duct and pylorus, accompanied by considerable hemorrhage. All the other patients were benefited by the operation. The most extensive lesion was in an old man of 68, in whom two-thirds of the stomach was removed; he gained twenty pounds and lived in comfort for a year. The least extensive lesion was a cancer of the lesser curvature; the patient was only slightly relieved and died in seven months. One patient is alive and perfectly well two years after the operation and has gained forty pounds; one is alive and perfectly well eight months after the operation and has gained forty-six pounds. My colleague, Dr. Nichols, has a patient in whom two-thirds of the stomach was removed, and who is well two years later.

If I may add my three cases of partial gastrectomy for benign disease, we have nine cases with two deaths, and considering the reasons for those two deaths I feel that the operative risks are not great. If I can keep from taking desperate chances in inoperable cases I feel that my mortality rate ought to be good.

The comfort of the convalescence from the gastrectomy cases, both benign and malignant, has been remarkable. Both the Billroth No. 11 and the Kocher method have been followed, but the finer points of technic have been, in the main, those advocated by Mayo[8] in 1906, which is, I think, a classic and for which we owe him a very great debt.

Such success as we have had in cancer cases emphasizes the importance of making an accurate decision in early cases, which are the very ones in which we can hope for most and perhaps may justify the writing of this paper. I am aware that I have suggested no certain method which will accurately decide for us in doubtful cases. No harm can be done by an attempt to set forth the principles which should guide us in making these very important decisions, and for this reason, and in the hope that the discussion may throw more light on the situation than I have done, I am emboldened to present this paper.

CONCLUSIONS.

In certain cases of indurated ulcer of the stomach the diagnosis between benign and malignant disease may be impossible, even with the abdomen opened. These are the early cases, in which the diagnosis of early cancer is important, as enabling thorough removal.

These cases, broadly speaking, fall into two classes:

1. Indurated ulcers (usually of the lesser curvature), which are movable and free and may be benign or malignant. Here, even if the tumor is benign, gastroenterostomy is often unavailing, and partial gastrectomy should be performed. Excision here is easy and safe.
2. Indurated ulcers of the pylorus often extending from the duodenum and adherent to the pancreas or left lobe of the liver. These are usually benign; excision is difficult and gastroenterostomy is safe and should usually be performed rather than excision.

In Class 1 excision should be done regardless of laboratory findings. In Class 2 the laboratory findings are important and usually reliable.

The responsibility of leaving a tumor which may be malignant is so great, however, that all diagnostic aids should be invoked, and in case of doubt excision, though at some risk, may be performed. The surgeon must decide in each case whether the risk lies in performing excision or leaving a tumor which may be malignant.

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DISCUSSION.

ON PAPERS OF DRS. MAYO AND LUND.

Dr. Alexander Hugh Ferguson, Chicago: I think there is no prominent surgeon in America to-day who would even dream of asserting that he never errs in making a diagnosis between carcinoma and chronic ulcer of the stomach. There are certain things, however, that we see and feel at the time of operation, irrespective of the history of the case before the patient comes to the operating table, which lead the surgeon to lean on one side or the other in his diagnosis of the border-line cases. For instance, one opens the abdomen and finds at once a large amount of straw colored fluid coming through the incision. It evidently is a case of neglected carcinoma, a very far advanced case. We do not very often open up the abdomen in such cases to-day, but we have in the past. If we see extensive adhesions and if we pass in the hand and feel them without feeling a tumor, the diagnosis is rather of inflammation that has disseminated itself and caused these adhesions to form. If, however, we find thick, continuous, friable adhesions between one viscus and another, between the stomach and the transverse bowel, between the stomach and the parietes or liver, then we may be sure that points to carcinoma. This, too, would be a very late and inoperable case. Often in the early case in which the tumor mass is movable we can not make a diagnosis even when the ulcer is seen and felt, for malignancy may be just beginning.

There are certain ways, however, in which we may proceed to determine what we have in hand, and that is to pass the entire hand into the abdomen, exploring the lymphatics and organs. The anterior surface of the stomach can be palpated with one hand, but when the posterior surface is to be palpated both hands must be used. By careful palpation we may be able to determine a tumor mass where we did not suspect it, located at some place in the stomach wall, that gave but meager symptoms or signs of such an advanced condition. When, however, it is in the pylorus, obstructive symptoms and signs tell whether it is carcinomatous or due to ulceration in a much earlier stage.

What does all this teach? It teaches that patients who suffer with gastric symptoms during the carcinomatous age ought to be explored early, because only by such early explorations can the pathologic condition be removed, and it is only of temporary use to do a gastroenterostomy.

Dr. Van Buren Knott, Sioux City, Iowa: I take it that the differential diagnosis is not so important in these extremely late cases referred to by Dr. Ferguson as it is in the earlier cases, in which there is a large infiltrated area at or near the pyloric end of the stomach. It is well known that the preoperative diagnosis between carcinoma and ulcer of the stomach is extremely difficult; in fact, it is one which we very frequently fail to make. Men of experience are equally well acquainted with the fact that the diagnosis at operation, with the abdomen open, is, in many instances, practically impossible. Finney last month reported two cases before the American Surgical Association, in which at operation, with the abdomen open, he was unable to decide whether he was dealing with a carcinoma or an ulcer at the pylorus. Frozen sections also often fail to determine whether the growth is benign or malignant. This is a striking instance of making a differential diagnosis under great difficulties. If it be true, as Dr. Mayo told us, in accordance with the statistics of many observers, that implantation of carcinoma on ulcer is found to occur in over half of the cases of ulcer of the stomach, it would seem that the differential diagnosis at operation between large infiltrated inflammatory growths at the pylorus, between benign and malignant growths so situated, is not important, because in cases amenable to radical operation we should be conserving the best interests of the patient by doing a pylorectomy or partial gastrectomy and cutting out the growth, thus doing away with the possibility of implantation of carcinoma on ulcer or a recurrence of the growth and troublesome symptoms.

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[8] Technic of Gastrojejunostomy, Ann. of Surg., April, 1906.

The statistics of pylorectomy to-day are very much worse than those of gastroenterostomy. Every one has done a pylorectomy in cases in which a growth suspected of malignancy was removed and found to be benign, and every one has also had the experience of doing a Rodman operation for ulcer and finding that the mass removed was a tumor of a malignant character.

Dr. Parker Syms, New York: Gastric and duodenal ulcers are so closely allied clinically and surgically that they may practically be considered to be identical. The pyloric part of the stomach is a common seat of ulcer, and the upper one and a half inch of the duodenum is the common and usual seat of duodenal ulcer. Of course, in this discussion we may leave out of consideration the superficial acute ulcers common in young women, and which may be treated properly by dietetic and hygienic means. We are considering the chronic, deeply situated ulcers, the indurated ones that do not tend to get well; it is these ulcers that present the greatest immediate and remote dangers.

Every case of gastric and duodenal ulcer should be recognized and cured. Attempts to effect a cure by hygienic and dietetic means should be limited to a brief space of time, and in all cases in which symptoms persist and a recurrence takes place operative procedures should be resorted to because the results will be much better than if a so-called expectant or conservative treatment is employed, and because the dangers of an uncured ulcer in this region are too grave to be neglected. Cancer of the stomach is a disease which can hardly be cured when it can not be recognized without opening the abdomen; therefore, our only means of curing this disease is to operate at a time so early that the diagnosis could not be made by the usual method.

Other dangers of duodenal ulcer are perforation and hemorrhage. There is no question that the vast majority of cases of ulcer of the duodenum and stomach may be cured by gastroenterostomy, and the preferable method of performing the operation is the one described by Dr. Mayo. We must not, however, neglect the fact that the end results are yet to be determined, and the argument put forth by Rodman calling for pylorectomy and removal of the tissue which may later become cancerous is too strong to be neglected.

Dr. N. B. Leggett, New York: I shall confine my discussion to the question of the function of the stomach in the presence of an open pylorus. The details which I am going to present are elaborated from the result of a series of experiments carried on at the Surgical Research Laboratory of Columbia University during the past winter. A gastroenterostomy was done on seventeen dogs, and by means of a simple probang devised by the laboratory student assistant, Mr. A. G. Sullivan, a "B B" shot, after being attached to a strong linen thread, was introduced into the stomach of each. The probang consisted of a heavy piece of wire strong enough to reach from mouth to stomach and twisted at one end. The other end was cast into a handle of lead. In use the string was threaded through the eye and the attached shot is brought up against the metal. The dog was then anesthetized, its mouth held widely extended and its neck straight. The probang and shot thus passed readily through the cardia. At this moment the handle, which was purposely made heavy and of lead, was sharply struck with a heavy metal instrument. The blow was transmitted to the shot, which flew off into the stomach, carrying the string with it. The probang was then withdrawn, a needle threaded to the string, passed through a fold in the base of the pharynx and there knotted. Two days later the dogs were killed with ether. Clamps were placed on the cardia, the pylorus and the intestine aboral to the stoma to prevent the string from slipping during the removal of the specimen. After hardening, the specimens were dissected, so as to show the position of the string as indicating the path taken by the bullet, and mounted.

There are obviously four ways in which the shot may travel, namely: first, through the pylorus and on down into the intestine past the stoma, second, through the pylorus and into the stomach by way of the stoma, namely, a direct cycle; third, through the stoma and into the intestine, the supposed normal course; fourth, through the stoma and back into the stomach, a retrograde cycle. All the stomata were made on the anterior aspect of the stomach. Of seventeen specimens studied, twelve were found to have the stoma within an average of 5 c.cm. of the pylorus, while in five the stoma was located at the most dependent portion of the stomach. On account of the variation in size of the animals operated on, the actual distance from stoma to pylorus would not create a correct impression. Of the twelve stomata placed near the pylorus, in five, or 41 per cent., the linen thread passed through the stoma. In seven, or 59 per cent., it passed through the pylorus, in one of these, two strings were fed, one passing through the pylorus and the other through the stoma. The string passing through the stoma made two complete cycles. In two cases in which the string passed from the stomach through the pylorus and again into the stomach through the stomach, the cycle was complete, and in one case a string making an exit from the stomach via the pylorus made three complete cycles. In this case the stomach was greatly dilated. Of the five specimens in which the stoma was located at the most dependent point of the stomach, the position of seven strings was to be studied, because in one case three strings were fed. In this case two strings were found to have passed through the stoma, one making a complete retrograde cycle twice. The third string had passed through the pylorus, making one direct cycle. In the five cases, four strings were found to have passed from the stomach by way of the pylorus and three by way of the stoma.

A point of interest, because it suggested a possibility of obstruction from spur formation at the point of the stoma, was the fact that when the cycle was direct, namely, through the pylorus and back again into the stomach through the stoma, the stomach was found to be uniformly dilated. In an anterior gastroenterostomy the stoma is used almost as frequently if placed at the dependent point of stomach as if near to the pylorus. Roughly speaking, the unobstructed pylorus is used to transmit one half of the shot swallowed, the remaining half passing through the stoma. Whether this proportion holds true for the semi-solid chyme can probably be determined by feeding string without shot.

Dr. F. B. Lund, Boston: The problem of distinguishing between an induration due to chronic ulcer and that due to carcinoma is to determine between actual tissue growth and deposit by inflammation, as in appendicitis where the appendix buried under an inflamed cecum, has given rise to appearances of malignancy and where recovery occurs after removal of the appendix. I have seen such cases of appendicitis where the cecum was excised on account of the simulation of malignancy. Dr. Mayo's statement that many pyloric ulcers are really duodenal ulcers is a help in the decision how to deal with these cases because duodenal ulcers rarely become malignant, while resection of movable ulcers anywhere in the stomach is simple and safe if one follows the technic he so well demonstrated for cancer of the stomach.

In perforating ulcers of the duodenum the tenderness is often over the appendix and not over the site of the perforating ulcer. I attribute it to the fact that the greatest tenderness is at the edge of the inflammation. Cases in which a perforating ulcer of the duodenum was mistaken for appendicitis are the cases in which the starvation treatment never produces a cure, so that the operator who waits for the case to quiet down before operating willl be disappointed.

Dr. William J. Mayo, Rochester, Minn.: There are a few points to which I wish to call attention. First, duodenal ulcer is more frequent than gastric ulcer; second, although we are told in the text books of the past that 60 per cent. of gastric and duodenal ulcers occur in women, that the contrary is true; third, if one does a gastroenterostomy for ulcer without proving at the operating table that the ulcer actually exists the operation will probably do the patient harm.

I think that the surgical cure of duodenal and gastric ulcers is certain in at least 80 per cent. of cases, and in 10 per cent. more the patient will be so much benefited as to be well satisfied with the result. Finally, I plead for earlier recognition of cancer of the stomach, and I would emphasize again the fact that a very considerable percentage of cases of cancer of the stomach begin in ulcer. There should be two classes of patients turned over to the surgeon promptly—those with tumor of the stomach and those with obstruction. Why is it that in the great hospitals cases of cancer of the stomach are found in the medical wards? Can one do any more medicinally in this disease than can be done in cancer of the breast, lip or uterus? A suspicion of cancer makes the case a surgical not a medical one, and the patient should be sent to the surgical side at once.

Again, if a tumor is present, what difference does it make whether that tumor is due to inflammation surrounding a thickened chronic ulcer that is liable to undergo carcinomatous degeneration, or whether cancer actually exists at this time? You will be surprised in some instances at the length of time patients are worked over for a diagnosis with a palpable tumor that, perhaps, they have discovered themselves. Let me say, too, that the moment you make a diganosis of tumor, no matter what its nature may be, you must consider the case a surgical one, and the surgeon should be called in consultation. I have yet to see the case of mechanical obstruction that can be cured by medical means when it is caused by chronic ulcer. Chronic ulcer producing obstruction can be carried along in various ways, but it can not be cured. When mechanical obstruction is present it is easy to tell by means of the stomach tube. Give the patient raisin cake or some raisins at bedtime. Pass the stomach tube in the morning and see if you can find the skins.

STATE RECIPROCITY IN DENTAL PRACTICE LICENSING

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Some wise man has said that no question is ever finally settled until it is settled right. The fight over human slavery went on for generations and even centuries; but the civilized world has come at last to realize that every man is born free and has certain inalienable rights to "life, liberty and the pursuit of happiness." The innate love of fair play which persists in the human heart, even when oppressed and abused, will sooner or later assert itself, and society will come, though by devious ways, to do justice. It is faith in the final righteous verdict of society that inspires confidence in the ultimate success of the effort to secure uniform state laws governing the practice of the dental profession.

In order to reach a clear understanding of the difficulties which confront any attempt to secure that for which so many of the dental profession are striving, it is necessary to consider the historical development of our form of government. When the thirteen feeble colonies emerged from the exhausting struggle for independence, they were indeed free and independent, not only of foreign powers but also of each other. There was no central head provided by the articles of confederation under which the war for independence was carried on. When peace had come it was seen that there was nobody to regulate commerce with foreign powers, or to make levies on the several states to maintain the credit of the nation. It was because of the absence of this central authority that the constitutional convention was called, issuing in one of the most remarkable documents which the world knows—the Constitution of the United States.

But man is not infallible, and the instrument created by our fathers could not make provision for every contingency that might arise in the development and progress of a people. So it has come to pass that the real union of the states has been an evolution rather than a creation. Just what right inheres in the individual state must be settled as the unfolding life of the nation brings forward one question after another for consideration and settlement. Massachusetts at an early day, and the southern states later on, claimed the right to withdraw from the union, a claim that was only settled at last and forever at the cost of untold sacrifice in money and human lives.

And even now the task of unifying independent states is going on. It is not yet decided what power, state or national, shall be exercised in the final control of our railways. The nation is to-day in a state of transition, but every step that is being taken leads toward the centralization of power. It is this amalgamation of state sovereignty with national control which renders difficult the task of securing uniformity in laws governing the practice of our profession. The states, very justly, are jealous of their rights. They cherish most fondly the right to say what may or may not be done within the confines of the particular commonwealth. They have the authority and purpose to exercise it. Possibly in this tendency an expression of fundamental human nature may be recognized and therefore escape severe blame.

In the discussion of any subject it is necessary, first of all, to state clearly that which is to be considered. The investigator may arrive at this in the present case by asking himself what conditions in the practice of the dental profession need to be remedied, so far as this practice is affected by the division of this country into states. We have long since come to be a nation, but our nationality has not extended its sway over all the activities of all citizens.

A dentist who has practiced successfully for ten years in Illinois may not move into the neighboring state of Wisconsin and continue the practice of his profession without being compelled to undergo an examination before the board of the latter state. His skill, his experience, the reputation which he has established, although it be world-wide, go for nothing. The fact that the examining board in Illinois has testified to his fitness to practice does not count. Perhaps such a state of affairs finds one of its most ridiculous illustrations in the methods which once obtained (and may yet, for all I know to the contrary) in the matter of teachers' certificates in the different counties of a given state. A teacher was

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* Read in the Section on Stomatology of the American Medical Association at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

examined by the county superintendent of one county, passed most creditably, was granted a first-grade certificate, and then was engaged as teacher by a school in a neighboring county. Was the certificate honored? Sometimes, by some large-minded man. But as a rule the teacher was compelled to undergo another examination before being permitted to instruct the youth of this county how to read, write and cipher.

There are two reasons why the prevailing method is unsatisfactory. First, it involves an unnecessary humiliation. For a man in middle life, who has been in active practice for twenty or twenty-five years, to be brought before a board and compelled to answer questions concerning his profession as though he were suspected of being an impostor, trying to palm himself off as something he is not, is to subject him to uncalled-for indignity. In the next place, it is quite probable that the examination will not serve to reveal the real knowledge and ability of the one examined. The phraseology of the text-book, the terminology of the lecturer, do not remain distinct in the mind of the busy professional man for any great length of time; but the latter has gained instead that which is of far greater worth than accurate definition, and that is the ability to do. Many a man in every profession, who would be vastly troubled to describe in fitting terms the best way of doing a given task, can roll up his sleeves and do the task to perfection. The fact that a man is a parrot and can glibly repeat what he has heard does not constitute overwhelming proof that he is competent to practice his profession. The present custom largely discounts practical ability and puts a premium on memory.

There is a profession the members of which undertake to care for the most important interests of man. Surely no profession should be more carefully safeguarded than that of the Christian minister who deals with moral and spiritual issues. If the state is called on to protect the interests of its citizens at any point, it certainly should be in the teaching which goes to make or mar manhood and womanhood. But the minister who is ordained and commissioned to his work in a New England state may go anywhere in all the length and breadth of our land and be sure of recognition of the standing which has been given him. I imagine that if our preachers were compelled to undergo an examination in theology every time they remove from one state to another, pastoral changes would be far less frequent than they are at present.

There is a very general feeling that the present state of affairs as regards the right of interstate practice in our profession is far from satisfactory. What can be done to remedy existing conditions? Three possible lines of action suggest themselves. If each state would recognize the validity of the licenses granted in every other state the present difficulty would disappear. An objection to this, in the minds of many, lies in the fact that the conditions to the granting of a license are so dissimilar in the different states. It is said that a man could pass the examination in a state where the requirements are not sufficient to insure competency, and then proceed to another state where the standard of the profession is high and enter at once on the practice of his profession. In this way incompetents and even charlatans would be given standing in states that have passed through severe struggle in bringing the profession to the high position that it now occupies. On its face that seems to be a serious and valid objection; but its force will depend on the extent to which insufficient requirements obtain in various states. That can be determined only by collating the laws bearing on this subject, and such an examination will go far toward allaying our fears. While it is true that some states have more stringent requirements than others, it is also true that few, if any, states put a premium on inefficiency. It stands to reason that each commonwealth desires to conserve the interests of her citizens. She is not willing to hand even the man with a toothache over to the tender mercies of an ignoramus. She also has a measure of state pride which forbids that she should allow a free course to ignorance while her sister states are insisting on capability. But this unlikeness in state laws, be it greater or less, suggests a second course of procedure.

Uniform laws should be secured in the different states of the union, so far as these laws bear on the practice of dentistry. Were this to be done, the only objection to the recognition of licenses granted by a sister state would disappear. There is absolutely no reason for having as many different dental laws as there are different states, except it be the American mania for legislation. It is said that when an Englishman has a spare hour he says to his comrade, "Let's go out and kill something." When the average American has a bit of leisure he says to his friends, "Let's go out and legislate." Americans have a passion for making laws, and each state seems to have a consuming desire to make laws unlike those of any and every other state. But what is there about the teeth of a Californian that differentiates him from a Georgian? Why should the man who lives in Minnesota need a different set of laws from the man in Kentucky to protect him from the ignorance or the laziness of the dentist? Why should not one standard prevail from the Atlantic to the Pacific and from the great lakes to the gulf? There is no reason why this should not be, except the stupendous difficulty of securing the necessary legislation. It might be brought about in half a dozen or even twenty states after prolonged endeavor, but it would be a herculean task to induce all the forty-six free and independent commonwealths to consent to such legislation.

This leads up to the consideration of a third possibility—that of securing federal legislation. At the risk of seeming to trench on the honored doctrine of "state's rights," I shall venture to say that this seems to me the most feasible plan of procedure. It would be vastly easier to secure legislation from the Congress of the United States, one body, than from the many bodies exercising legislative functions in the different states. The law-making body for the nation could deal with the whole matter in a comprehensive manner impossible for the legislatures of the separate states. By the appointment of a federal commission having general supervision of all matters pertaining to the preparation for and practice of the dental profession, not only could uniformity be secured, but the profession could be placed on a secure and honored basis. Such a commission could prescribe the standards for admission to and graduation from all dental colleges and formulate the conditions to practice in every place in all the land. Does any one doubt the effect of such a provision? It would dignify our profession, it would do away with present embarrassment, it would beget needed *esprit de corps*.

With reference to any such proposition as this which I am discussing, two questions may fittingly be asked. First, would any person or any interest be injuriously affected by that which is proposed? Would uniform laws for the profession operate to the detriment of any member? Certainly it would not work injury to the profession as a whole, but it is more than possible that practitioners here and there have the feeling that their particular chance for making a livelihood would be affected. It is difficult, if not impossible, to see how this could really be. Such laws as are proposed would not make entrance on the practice of the profession any easier than it is now. The bars would not be thrown down for incompetents to enter. As a matter of fact, it seems very likely that such a federal commission as is proposed would remove from the profession some of the weeds which are now allowed to grow untroubled. How often does it happen that an unethical member of our profession is brought up short and debarred from practicing? Do we not all know of men whom the honorable members of our profession refuse to recognize as brother practitioners, who live by bamboozling a credulous public, whose advertising and self-puffing is nauseating to every decent dentist, but who go on their way fleecing the public year in and year out, undisturbed? It is as certain as anything can be that a national commission would not tolerate that which is the shame of our profession to-day. For this, if for no other reason, I long for the day when the chaotic conditions which now obtain shall be supplanted by the order which would come with a federal commission.

But there are certain sections of the country in which the members of our profession seem to be panic-stricken whenever uniform laws are mentioned, lest their communities should be overrun by a horde of "one-lung" dentists. It is well known that persons who have reason to believe that they either have or are threatened with tuberculosis frequently betake themselves to those sections of the country offering the most favorable climatic conditions. The assumption is that if Arizona and California and New Mexico and Texas do not guard their borders against the incursion of consumptive dentists, there will pour in on them a mighty stream of expectorating practitioners. The vision which is conjured up by the riotous fancy of the brethren in some of these states is indeed appalling—but it is only a dream. Their fears multiply the numbers of tuberculous dentists, and if uniform laws should be enacted to-morrow it is doubtful if Phoenix and San Antonio and Pasadena would know the difference, at least through any abnormal growth of their consumptive population. And if it did give a chance to some poor fellow to find health, would that wrench the heart of any manly man who is practicing in any of these salubrious cities? Have we come to such a state of petrified selfishness that we are unwilling that our brother man, to say nothing of a brother practitioner, shall have a chance to win back his strength because his presence in our community might mean increased competition in our business? For one, I refuse to think so meanly of my professional brethren, even though this argument has found expression by isolated individuals.

A second question which needs to be asked and answered is this: Would the proposed legislation serve to better conditions? I have already indicated the answer; but the action taken last year by the National Association of Dental Faculties, the National Dental Association and the National Association of Examiners furnishes an emphatic affirmative. Why should these bodies, as they did, appoint committees to consider this matter jointly, with a view to inducing effective endeavor to secure uniform legislation, if, in their opinion, such legislation would not inure to the distinct benefit of the dental profession? I doubt if there is one intelligent member of our profession who distrusts the effect of the proposed legislation in enhancing the interests of the cause to which we have devoted our lives.

What, then, stands in the way of accomplishing this desirable end? Is it the theory of "state's rights"? To some extent. Is it the force of inertia, by virtue of which it is difficult to set in motion a stationary body? To some extent. There are many reasons why this movement, so warmly sanctioned by many and so ardently urged by some, makes slow progress. What is the one great obstacle? To act on the dictum of Emerson, "Let there be truth between us two forevermore," it must be said that the chief hindrance lies in our selfishness. When the members of the profession are united in support of this undertaking nothing can prevent its accomplishment. Laymen are not interested in keeping things as they are. They have little interest in the matter one way or another. They are not blocking the wheels. It is the fear in the hearts of members of our profession that somehow their individual incomes will be injuriously affected by the change, that halts the ongoing of a movement fraught with untold good to our profession. When the dentists of this country, as one man, ask for uniform laws, then those laws will be enacted. And when we have grown to sufficient stature in manhood to forget personal and selfish interests in remembering the larger good, then we shall ask, and, asking, receive.

92 State Street.

DISCUSSION.

Dr. Vida A. Latham, Chicago: A prominent member of the profession, sick from overwork, was advised to change climate. He removed to another state, passed the state board, paying $50 as the examination fee, and worked in that state for some time. His wife became ill and he was advised by eminent physicians again to change climate. At great inconvenience and expense he paid another $50, took the examination and failed. Is it right, when you have conformed to the state (or states) laws at the time your diploma or state license is received, with the understanding that the laws of that county and state are in force, that your license should not be recognized in every state? If a man has won a state board license, why must he pass in another state, provided he is a graduate of a properly-equipped and well-known college? We are ourselves to blame for this condition. Another great difficulty is that of regulation of colleges. If we arrange that all our schools shall agree with all other schools as to the requirements, with adequate equipment and proper educational facilities, we shall have less trouble about reciprocity and equality.

Dr. E. A. Bogue, New York: Perhaps Dr. Peck can tell us if he has carefully inquired of those competent to judge as to whether or not federal legislation on the subject would be efficient. If he has and we were to devote all our energies toward getting this federal legislation, then he has struck the nail on the head. If he has not, then perhaps he can tell us what steps to pursue.

Dr. Thomas L. Gilmer, Chicago: It seems to me that there is but one way under existing conditions by which we can bring about reciprocity which is so desirable both in dentistry and in medicine, and that is to procure uniform laws. As to the federal government taking charge of this matter, it seems to me quite impracticable unless the Constitution of the United States is changed by amendment, which would be a long and difficult, if not impossible, method. If we continue to make proper efforts in the right direction we shall eventually succeed in getting uniformity of laws in all of the states which will give one the right, which is his right, to practice in any state if he is licensed to practice in any other state.

Dr. Frederick B. Moorehead, Chicago: We must never forget that the integrity, the safety and the longevity of the nation depend on the rights of the individual states. If these rights should be disturbed in any sense the whole country would collapse. I believe that federal control' is utterly impossible. The only feasible plan is for the states to act. This has come about in the practice of medicine, and it must come in the practice of dentistry in precisely the same manner. In the beginning of reciprocity in state license of various state boards of health one state suggested that it make a combination with another state, that with a third state, and so on; and these states have set up a standard which is compelling other states to come in under the same standard. The safety of reciprocity rests absolutely on that fact. If in our own profession two or three of the strong states can make a standard, other states will be compelled to come into line. It is a good thing that the matter does progress slowly, because if it went rapidly it would fail, and failure puts every movement back many years.

DR. A. H. PECK: There are thirty-two states at the present time which grant reciprocity.

DR. EDMUND NOYES, Chicago: There is great need of far more reciprocity in laws between states than we now have. We need it throughout the United States in regard to divorce laws, and I am under the impression that teachers are subjected to re-examinations in absurd ways. There are many such reforms that need to come, and will come. What has been said about medical reciprocity has the very greatest encouragement in it. There is no reason in the world why we can not accomplish the same thing, and much more rapidly than the medical men have accomplished it, because we have the precedent that they have established. We have only to travel the road which they have pioneered, and it is a matter of such reasonableness that there should be practical uniformity of standards and consequent reciprocity in privileges that it seems to me impossible that it should be very long delayed.

DR. T. E. CARMODY, Denver: A great many members of the dental and medical professions come to Colorado because they have lost their health in the east, and a few from Colorado go east and take examinations. Those who come to Colorado for their health are usually the ones who have been educated up to a high standard; they are able to pass the examination. The health of drones seldom fails. The people who fail in examinations are those who come there thinking to evade the high standards of the east.

DR. ADELBERT H. PECK: It is immaterial to me whether each individual state or the central government acts—it is results that we want. If it were possible for the federal government to control these matters, that would, in my opinion, be the ideal way. There are many matters with which states have to do individually, that are now being controlled by the federal government, and this is coming to be the case more and more each year. I do not, therefore, understand why it could not act in this matter as well as in the others. A federal commission has been advocated for the regulation of state water supplies, for controlling epidemics, for carrying on the fight against tuberculosis, etc. Why is it impossible for us to have a little federalism in connection with dentistry? However, there are thirty-two states at the present time in which the medical profession has reciprocity, and others will probably come into line in the near future. Reciprocity in dentistry is now being agitated with very favorable indications in six or seven of our states, and no doubt that number will soon accept the doctrine, and in fifteen, twenty or thirty years hence all of them may have adopted it, we hope. But it is a slow process, and we will, I think, find that it will be a longer time than many anticipate before all the states accept the doctrine. I wish it could be to-morrow, because I believe that we ought to have reciprocity in the licensing of dental practitioners in all the states.

Unusual Mortality Rate in Autopsies.—A writer in the *Virginia Medical Semi-Monthly*, July 10, says: "During the time since 1900 I have performed 500 autopsies. Of this number 161 *resulted in death* (italics ours) as a result of injuries to the head."

MEDICAL EDUCATION IN THE UNITED STATES; THE NEED OF A UNIFORM STANDARD.

ARTHUR DEAN BEVAN, M.D.
Chairman of the Council on Medical Education of the American Medical Association.
CHICAGO.

The methods of medical education in this country have been largely drawn from those of Great Britain and Germany. Our first medical schools, those of Pennsylvania, Columbia and Harvard, were modeled largely after those of Edinburgh and London. For a short period about 1850 the influence of the great French medical teachers was felt, but later, especially since 1870, German influence has predominated. I do not mean that in medicine America has merely adopted and imitated English and German methods; for as we all know the men who took an active part in the creation of our republic were noted as fertile in invention in all fields of thought and action and especially so in medicine, as shown by such American discoveries as ovariotomy and anesthesia. Naturally, however, in the establishment of the first medical schools in our new country the best existing types in the countries from which our people came, i. e., Great Britain and Germany, were adopted as models.

REASONS FOR PROPRIETARY MEDICAL SCHOOLS.

Unfortunately, however, after the war of the Revolution there sprang into existence a peculiar American type of medical school. With the enormous and rapid development of our country, which in a little more than a hundred years has grown in population from three to eighty millions and in extent from a narrow strip on the Atlantic seaboard to the enormous sweep of land extending from the Atlantic to the Pacific, there came an enormous demand for physicians from the thousands of cities and towns which sprang into existence.

This legitimate demand led to the establishment of a great number of medical schools all over the country. Unfortunately, this demand was so urgent that the medical school often preceded the high school, college and university and marched with the church in the vanguard of the wave of population, which spread over the land. Most of the medical schools developed independently of any university and were owned and controlled by small groups of medical men, who, in many instances, conducted the schools as business enterprises for what money and reputation they could make out of them, and for a time teaching medicine in this country was a profitable business. It must not be supposed, however, that these schools were necessarily all bad. Many were controlled by men of high ideals, by men who became great teachers and left an impress on the medicine of their day—such men as Gross and Flint, Van Buren, Davis, Gunn, and many others. Some of the better type of these schools, like Bellevue, Jefferson, Rush and others, did an invaluable service in furnishing thousands of men well trained in the medicine of their time who in war and in peace served their country well.

A WRONG PRINCIPLE AND THE RESULTS.

But the principle of conducting medical schools as commercial enterprises was, of course, wrong and indefensible, because it led to competition for students and resulted in the reduction of fees and the time of study, in the accepting of men without preliminary education and in the graduation of unfit men. The result has been, that in the United States to-day we have more medical men per capita and more medical schools than any other country in the world. In fact, we have almost as many medical schools as all other countries combined —161 to 174 for the rest of the civilized world.

At the present time, of course, we have a considerable number of schools which furnish thorough training and a few schools which are equal to any in Great Britain or on the continent. The average medical school in this country, however, is unfortunately low. In the investigation made by personal inspections last year by the Council on Medical Education, graded on a civil service basis[1] and on a very liberal and lenient marking, only 82 of the 161 medical colleges could be listed as acceptable; 47 were classified as doubtful, while 32 were found to be unsatisfactory. It is fair to say that not more than 80 out of the 161 schools teaching medicine have any claim to recognition. I wish that every member of the American Medical Association could have made the inspection of the medical schools of this country with our committee last year and seen the farce of attempting to teach modern medicine, as it is being taught in many schools, without laboratories, without trained and salaried men, without dispensaries and without hospitals. Schools were found which were mere quiz classes, where students were given just enough text-book knowledge to attempt state board examinations, and where the teacher looked for his compensation in consultations sent him by his illy-qualified pupils.

NO LONGER AN EXCUSE FOR LOW STANDARDS.

But the wave of settlement and civilization has finally spread until *there is no longer a frontier*. Again, the supply of physicians far exceeds the demand. From the standpoint of demand, therefore, the excuse for low standards of medical education and of medical colleges operated for profit no longer exists. Medicine, too, has changed. The known facts of medicine thirty years ago might have been taught in a two years' course of didactic lectures by a few men. To-day the known facts in medicine, which must be mastered before a student becomes a qualified practitioner, require much more time, require a thorough preliminary preparation, and a thorough laboratory and hospital training.

MODERN DEMANDS IN MEDICAL EDUCATION.

To meet the demands of modern medicine, the medical graduate hereafter should be one whose preliminary training, besides a high school course, has included at least a year's work in college physics, chemistry and biology. His medical training should have been in a medical college fully equipped with all the extensive apparatus so necessary for the teaching of modern anatomy, physiology, pharmacology, bacteriology and pathology; in a college which has experts paid to devote their entire time in charge of these laboratories; in a college which has hospital and dispensary facilities in such abundance as to allow of a carefully graded course even in clinical instruction, and in a college which offers thorough laboratory courses in clinical diagnosis in connection with the study of hospital and dispensary patients. Finally, the medical student should receive the training and experience of at least a year's internship in a hospital. These requirements would not be unreasonable.

The time has certainly arrived, when in this country of great wealth, great intelligence and wide opportunities to acquire an education, the medical profession and the public should unite to demand a reasonably thorough training of its medical men. We should insist that medical standards be as high and medical training as thorough as in other civilized countries.

No physician should under any circumstances retain or accept a connection with a school not capable of teaching modern medicine. State boards should inspect the schools and refuse recognition of those not teaching or not capable of teaching modern medicine.

PROBLEMS IN MEDICAL EDUCATION; LACK OF TRAINED TEACHERS.

Next to the requirement of a higher standard of *preliminary education, probably the most important* problem confronting medical education in this country is the securing of trained teachers, especially for the laboratory courses. It is difficult to secure and keep bright men in the laboratory years, especially men who have graduated in medicine and who have had a taste of clinical work as hospital internes. The result has been that the laboratory positions, except in the best schools, have been filled largely either by men without sufficient training or by general practitioners who devote but a small part of their time to the work. Again, what is undesirable, in some of our schools these positions have been filled by men who have not had a complete medical training and do not have the best conception of practical medicine. This tendency impresses me as unfortunate and in my opinion a definite stand against it should be taken. It is evident that a teacher of anatomy, or physiology, or pharmacology or bacteriology, who has not had a complete medical training is seriously handicapped and is not apt to be the best man to teach these subjects in the medical school. Without the medical point of view obtained from a complete medical course, the teacher in these subjects is liable to be an inefficient or biased instructor.

Modern clinical medicine is fully as scientific as the work of the laboratory years. The teacher in the laboratory years of a medical school who is not in close touch with modern clinical medicine, is sometimes firm in his belief that he, alone, is teaching the science of medicine and that his colleagues in the clinical years are teaching a handicraft. That this feeling exists not only here but also in Germany, is shown by a statement made by Friedrich Mueller, the great German internist, in a recent lecture,[2] in which he says:

> As a professor of clinical medicine I hold the opinion that an observation made at the bedside is as well to be considered scientific as an observation made on an animal, nor do I think that because it is unable to speak that the rabbit is a more scientific animal than man

NEED OF PRACTICAL MEDICAL TRAINING.

In a notable address by Sir Felix Semon,[3] on English and German Education, we find the following:

> No doubt the learning of science for science' sake is a most lovable thing and one which every scientific worker would instinctively encourage as much as he can, but the stern fact intervenes that life is short and art is long and there is much

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[1] THE JOURNAL A. M. A., May 18, 1907, p 1702

[2] Archives of Internal Medicine, Jan. 15, 1908.

[3] British Medical Journal, Nov. 2, 1907.

> to learn. The claims of individual sciences, which are only accessories toward the making of a doctor must of necessity be subordinated to higher purposes and the highest purpose in the education of the medical man is to make him fit for the exercise of his future duties. The work of the teacher is to make the pupil familiar with those results of the science he teaches, which will be practically useful in the doctor's future career.
>
> I am fully convinced that as a medical man through inclination and circumstance is drawn to do work in a certain line his preparation should be private and individual, and that the whole medical community should not be compelled to spend a disproportionate amount of time and energy on subjects which will be of real use to only a very few, while subjects of the greatest importance have to suffer in proportion to the amount of time devoted to purely scientific purposes.

This statement from one who has worked in both pure physiology and in clinical medicine carries great weight and should be pondered by some of our men in the laboratory years, who may not care to see the practical application of their work.

COOPERATION OF LABORATORY AND CLINICAL TEACHERS.

I should make this further observation in connection with this subject, that not only should we require a medical training for all of our instructors in the medical departments, but we should insist upon a close association and cooperation between the departments of the laboratory and clinical years. I know that the clinical years would be greatly benefited by keeping in close touch with the laboratory work and I feel equally confident that the men in anatomy, physiology, pathology and pharmacology would be better instructors and much more apt to develop research work of value if they kept in touch with the problems and advances in clinical work. That such association is compatible with the highest development of their own scientific departments is clearly shown by the work of such men as Waldeyer, Virchow, Cunningham, Koch, Horsley, Welch and others.

I believe I see in such cooperation also a means of providing the best instructors for both laboratory and clinical departments. If the plan was generally adopted of filling the positions in the clinical departments by men who had devoted a certain amount of time to teaching in the laboratory years, it would induce the best brains that graduate in medicine to take up laboratory teaching. A few of these would remain permanently in these departments fascinated by the work, while such as were later appointed to clinical positions would have the best possible foundation for their clinical work.

THE BEST CLINICAL TEACHERS.

The man who teaches clinical medicine or surgery, therefore, should have a good laboratory training and a great fund of experience gained from the handling of a large amount of clinical material. If he is to teach his students to become both scientific and successful practitioners, this material must represent all classes of society. It goes without saying that the clinical teacher must devote much of his time to teaching and research and that his college work must have the first call on his time.

The best clinical teacher is necessarily a successful clinician; he must be both a teacher and a clinician. The suggestion, which has been repeatedly made that in the development of the modern medical school the teacher in the clinical departments should be a salaried man devoting his entire time to teaching and research is easily shown on analysis to be fallacious. The clinical teacher who devotes one-half his day to his teaching and clinical cases and the other half to a lucrative, private practice, will make a much better teacher than the clinical teacher who devotes his entire day to his clinical work and draws a salary on which he lives. Such great teachers as Billroth, Kocher, Fenger and Senn are evidence of this fact.

It is difficult to keep a twenty-five-thousand-dollar man in a twenty-five-hundred-dollar position. I know that it is easy to find theoretical arguments in support of the salaried clinical teacher devoting his entire time to teaching. I simply present the fact, however, that the greatest clinical teachers always have been and probably always will be the men whose skill has been recognized and sought by both rich and poor, by both the profession and the laity.

Even if a medical department had sufficient money to pay enormous salaries to their clinical teachers, the money would be *much better used in paying larger* salaries to the laboratory men, who are notoriously underpaid and in providing living salaries for the younger men in the clinical departments who are doing the routine teaching and devoting much time to research work.

DEVELOPMENT OF CLINICAL TEACHERS.

Few of the schools of this country have the well-established system which exists in Germany for the development of well-trained clinical teachers. Each clinical chief should choose his assistants from men, who, after their hospital interneship, had served for several years in either anatomy, pathology, physiology or pharmacology as instructors and in research work and demonstrated their capacity. These men should be promoted, as they become more and more competent, from the lowest position to that of first assistant, which place might be reached in from five to ten years, by which time a man as first assistant should have so mastered his subject that in the absence of the chief he could take charge of the service and conduct the clinic. By this time, too, in the event of the retirement or death of his chief, or the occurrence of a vacancy in another school, he could offer himself as thoroughly qualified for the place.

In order that we may better estimate the needs of medical education in America let us note the requirements of medical education in Great Britain and Germany.

REQUIREMENTS IN GREAT BRITAIN.

In Great Britain there are 36 medical schools, 21 in England, 6 in Ireland and 9 in Scotland. The control of medical education is in the hands of the General Medical Council, which has the power to create a register of qualified practitioners, and which determines the amount of preliminary education, the character of the medical curriculum and in a general way the examination for licensure, which last, however, is in the hands of a number of separate bodies.

The English boy who eventually studies medicine, beginning at 6 years of age, has about twelve years of preliminary education. He leaves the secondary school at 18 or 19 and after passing an examination on English mathematics, Latin and either Greek or a modern language, matriculates in medicine. He can legally begin as early as 16. It is interesting to note that the very strong British educational committee with Victor Horsley at its head has not been able to increase this even to 17 years.

The medical course covers a minimum of five years, but as a matter of fact the average time spent by the medical student is more than six years. In 1906 the average time of those who were licensed was six years and eleven months. Of the five required years, the first year is devoted to physics, chemistry and biology, i. e. botany and zoology; the second to anatomy, physiology, organic chemistry, histology and pharmacy; the third to anatomy, physiology and pharmacology; the fourth to medicine, surgery, pathology, obstetrics, therapeutics and hospital work, and the fifth year to medicine, surgery, hygiene and the specialties. The student spends part of the fifth year in a hospital as clinical clerk and dresser. On the completion of his course, he presents himself for examination before one of several bodies in order to secure a license to practice. This examination is rigid and tests the ability of the student thoroughly; about 30 per cent. fail so that, as already stated, the average time devoted to study before securing the license to practice is between six and seven years.

The schools are fairly uniform in character, they are occasionally inspected by the medical council and are required to do acceptable work. There are no very poor or worthless schools corresponding to the poorer schools found in this country. On the other hand, there are no medical schools with a degree requirement for admission.

REQUIREMENTS IN GERMANY.

In Germany the boy who eventually studies medicine, begins at 6 in a public school and later enters a gymnasium from which, after twelve years of study, he graduates at 18 or 19 years of age. He is then entitled to matriculate at any of the German universities.

There are three types of secondary schools in Germany corresponding to the different groups of studies offered in the best high schools in this country. The gymnasium may be likened to the classical group, the *Realgymnasium* to the Latin-scientific group, and the *Ober-realschule* to the English and modern language group. I am inclined to believe that a higher value has been given to the work of the German gymnasium by some of our German friends and some of our own college professors than it is fairly entitled to in comparison with some of our best high schools. Some even state that the work of the gymnasium is equal to our four-year college course, while others say it corresponds to the first two years of our college course.

Muensterberg, for instance, would have us believe that the German boy leaving the gymnasium is about as well qualified to begin professional studies as an American boy who graduates from Harvard. Muensterberg probably believes that the German navy sustains about the same superior relation to the American Navy.

It may be true that in this country the high schools are not as uniform as are the gymnasia in Germany and that on the average the instructors in the gymnasia are better qualified than our high school teachers. Nevertheless, I feel confident, that the American boy, who graduates from one of our best high schools at 18 after twelve years of study is quite as capable of beginning the study of medicine as the German boy, who graduates from the average gymnasium at 18 after twelve years of study.

We should keep in mind, also, that our elementary and high schools are making marvelous advances just as are our medical schools and that we can confidently look forward to the time, when, throughout the entire country, and not excepting the south, twelve years of education in America will mean as thorough preparation as will twelve years of education in any other country.

A SIX-YEAR MEDICAL COURSE.

Graduation from the German gymnasium admits to the six-year medical course. Physics, chemistry and biology are taken in the first two and one-half or three years of the medical course along with anatomy, physiology, pharmacology and pathology. The fourth and fifth years are devoted to medicine, surgery and the specialties, and since 1904 a sixth year has been required which the student spends as an interne in a hospital.

Germany has twenty medical schools, all being medical departments of universities. They are conducted on such uniform lines that a student can pass freely from one university to another, the work of one being recognized by all. The result of this scheme of education, is to turn out a high average of medical men. The German scheme of medical education, however, is not entirely perfect. There is a serious lack of supervision because of which a student may do little or no work, but may loaf and drink away his time.

CONTROL OF MEDICAL EDUCATION IN THE UNITED STATES.

Unfortunately, in the United States with its 161 medical schools there is no national control of medical education. Medical legislation is in the hands of fifty state governments and each state makes its own medical laws and executes them as it sees fit, with the result that there are fifty different standards of control.

The reorganization of the American Medical Association, however, has developed a body of 80,000 medical men, which organization represents the best element of the medical profession and it is within the power of the profession thus organized to demand and secure proper medical legislation in each state and to see that it is properly enforced. Without question the securing of more reasonable standards of medical education is at present the most important function of the American Medical Association and of the state medical societies. In the interest of public health and for the prevention of disease, no movement is of greater importance than that which will secure for a country thoroughly qualified medical men. Therefore, every qualified physician in each state should take an active interest in bettering the quality of the future graduates in medicine.

NEED OF AN AMERICAN STANDARD.

Again, there has been no American standard generally accepted, although several organizations are working toward that end. Our medical schools represent the best and the worst in the world. Some demand a college degree, which means three or four more years of preliminary work than is required abroad, while others demand no preliminary education whatever. Neither of these extremes should be taken as the standard. While no student should begin the study of medicine without a high school training and a thorough understanding of chemistry, physics and biology, on the other hand the requirements of a college degree should not be made mandatory. If we were to present to the medical faculties of the universities of Berlin, Vienna, Edinburgh or London, the suggestion that they should demand in addition to their high school education a four-year course in a college of arts they would probably ridicule the suggestion and not consider it seriously at all. A limited number of men will secure a college degree before entering the medical school and such men should be encouraged, but in the framing of a broad university scheme of medical education, the requirement of a college degree, of all medical students should not be seriously considered by us in America any more than it has been in Great Britain and Germany.

THE AMERICAN STANDARD.

To my mind the minimum American standard should eventually include the following requirements:

A. The completion of a course in a high school such as outlined by the committee of ten of the National Educational Association,[4] or, in other words, a high school having a four-year course and which requires for admission the work of eight years in the elementary grades. This standard has been adopted by the Carnegie Foundation for admission to colleges of liberal arts.

B. A thorough training in physics, chemistry, biology and one modern language, preferably German, which would mean the equivalent of at least one year's work in our leading colleges of liberal arts. Many of the schools will require two years of this work, which may probably be the better plan.

C. A four-year course in medicine, which should include:

(a) Two years of study, consisting largely of laboratory work, in anatomy (including histology and embryology), physiology, chemistry (including physiologic chemistry), pharmacology, bacteriology and pathology, and

(b) Two years of clinical work largely in dispensaries and hospitals, including thorough courses in the practice of medicine (including physical diagnosis, pediatrics and nervous and mental diseases), surgery (including surgical anatomy and operative surgery on the cadaver), obstetrics, gynecology, materia medica, therapeutics, laryngology, rhinology, ophthalmology, otology, dermatology, hygiene and medical jurisprudence. There should also be a course in clinical microscopy, including hematology.

D. A year as an interne in a hospital. This last practical year is one of the most important in the course and should be made compulsory.

Such a scheme of medical education is practical and efficient and it is possible for all medical schools which have any good reason for existence to come up within a reasonable time to this standard as their minimum requirement.

It certainly would add strength to the movement to secure a high and uniform standard if our best institutions would adopt some such standard as I have outlined, which is practically the standard of Germany. I believe that by so doing they would fulfil their duty to the public much better than by adopting a degree requirement which is so time-consuming that other institutions of the country and the world can not agree to it.

One of the important functions of our great universities is to educate thoroughly competent medical men, and each one should turn out a large number of such men, not a limited number. Each should hold the same place in its community that is held by the great German universities and should provide largely the medical men needed in the section of the country in which it is located. Our better universities should not be put on a basis that will seriously limit the number of competent medical men, thus leaving the duty of supplying the great bulk of physicians to the poorer, illy qualified schools.

A HIGH, PRACTICAL AND UNIFORM STANDARD DESIRED.

What we need is a practical and high uniform standard for all schools. Dr. N. P. Colwell, the secretary of the Council on Education, made a careful investigation of the medical courses in the twenty most important countries and found that no country required more than two years of higher preliminary education and that the earliest age of graduation was 24 to 25 years.[5] If a college degree was required for admission as at some of our university medical schools the age would be 27 to 28. Already, however, there is sweeping over the country a strong movement for a standard of medical education which is high and yet practical. More than fifty schools—about two-thirds of the acceptable schools of the country—have agreed to adopt by 1910 as a preliminary requirement a four-year high school education plus a training in physics, chemistry and biology and one modern language. The practical year as a hospital interne is largely taking care of itself. Already in our better schools the majority of the graduates secure hospital positions. The desirability of this practical year is recognized also by the medical graduates and hospital positions are eagerly sought.

The general adoption of the standard above outlined is sure to come within the next few years. This will mean a great reduction in the number of medical schools and a decided improvement in the 60 or 80 schools, which will remain.

In order to obtain this high standard the better elements in the profession must unite and work for this common purpose. In this country in order to teach modern medicine we need state aid in private endowment. We must appeal to the public to provide such aid and educate them in the possibilities for good in providing well trained physicians.

RECOGNITION OF THE GOOD AT HOME.

Chauvinism should have no place in medicine and yet it is well for each nation to have a proper pride in and cultivate a patriotism for its own medical profession and its own medical achievements. We have not done this in America as we should. We have been rather prone to belittle our own medical men and our own medical work and to exalt those of Germany, Austria, England and France. We have too often given important positions to foreigners, who have sometimes unfortunately shown no loyalty to our country or to our ideals and in some of these cases it has become evident that the position and opportunity would have developed a much better man out of our own home material.

Let us remember first, that we are Americans and let us not be ashamed to cultivate a patriotism for American medicine. In spite of its shortcomings, many of which I have just mentioned, American medicine, even to-day is from the standpoint of productiveness of both laboratory and clinic superior to that of any other country, except possibly Germany, and in some matters, as in the immediate care of individual cases in clinical medicine, the purely operative side of clinical surgery and in surgical technic, America leads the world. American medicine and American Medical Education have been advancing in the last twenty years by leaps and bounds and we can look forward to the future confident that in the coming great development of modern medicine our country will contribute fully its part.

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[4] The Journal A. M. A., July 6, 1907, p. 65.

[5] Report of Council on Medical Education, The Journal A. M. A., May 16, 1908, p. 1641.

100 State Street.

THERAPEUTIC IMMUNIZATION IN MIXED INFECTION.[*]

A. P. OHLMACHER, M.D.
DETROIT.

Among the many problems that confront the physician who would apply in practice Wright's method of therapeutic bacterial immunization is the one of mixed infection. What should be the course in case of a mixed infection? Here, as elsewhere in the practice of bacterial therapy, judgment as to the relative importance to attach to the various factors must decide the question; and it is to give the results of my quite extensive personal experience that the present communication[1] is offered. In a general way it may be said that a mixed infection offers a less promising outlook than that by a single bacterial species, and still some brilliantly successful results have been obtained by inoculations in very complicated and long-standing infections.

Given two, or even three bacterial species, well known as pathogenic agents, and their simultaneous appearance in the secretion of a certain lesion, it is entirely proper to inoculate a mixed vaccine containing proper doses of the offending bacteria. Or when the urgency is not too great inoculation with the predominating and most likely pathogenic agent is to be first performed, and in case of an unsatisfactory issue, a vaccine from the other bacterial species can be added in subsequent injections. Say, for instance, that *Staphylococcus aureus*, or a streptococcus, is found associated with *Bacillus coli* in the discharge from fistulas of abdominal origin, a mixed vaccine would be in order. Again, especially in old suppurative lesions, a putrefactive organism (of the proteus group generally) is found largely exceeding the underlying and presumably original pyogenic agent like staphylococcus or streptococcus. Here the pyogenic microbe might first be tried, but to it should be added a vaccine from the secondary organism in event of a failure to bring a good result. I have been surprised several times to find success seemingly hinging on the use, in conjunction with the vaccine of a well-known pathogenic species, of that prepared from the secondary invader belonging to the proteus-like or colon-like, or pseudodiphtheria bacillus group, for some of these secondary organisms were clearly of saprophytic origin and one would ordinarily not assign to them any greater importance than that of accidental invasion into an already prepared soil. For example, in an extensive draining thoracic empyema which had been abandoned from the standpoint of further operative interference, and where the discharge had recently become exceedingly foul, I recovered a streptococcus and a bacillus of the proteus group. Inoculations of the streptococcus failed to effect a marked therapeutic response, but when a vaccine of the proteus was added, clinical betterment promptly began and continued until the final complete cessation of suppuration and closure of the fistula.

In dealing with the mixed infections of a pyogenic nature, it is necessary to follow the events in the more chronic suppurations by bacteriologic analyses from time to time, and to modify the inoculations to correspond with the changes in the bacterial flora of the pus in case the therapeutic response is not satisfactory.

Certain combinations of bacterial species seem particularly obstinate in their reaction to therapeutic inoculations. It has appeared to me that chronic infection in which *Bacillus pyocyaneus* becomes associated with other pyogenic species is especially stubborn, for I have utterly failed to obtain a sustained improvement in one case of infected breast wound, and another of cystitis and possibly pyelitis in each of which the pyocyaneus was associated with the streptococcus, notwithstanding most patient trial by inoculations variously spaced and dosed, and employed both with and without the guidance of the opsonic index. Such a state of affairs is in keeping with the well-known proclivity of wounds with pyocyaneus infection to be obstinate in healing. But on the other hand, I have just passed through an experience with a recently infected phlebotomy wound with extensive cellulitis and suppuration of the arm, due primarily to streptococcus in which the widely incised suppurating tissues took on a pyocyaneus infection after a week, followed by a metastatic arthritis of the ankle due to the streptococcus alone. Here a speedy, favorable reaction followed mixed inoculations of the autogenous streptococcus and pyocyaneus, with diminution and disappearance of the blue pus in the course of two weeks and satisfactory healing of the infected incisions, including the infected joint.

In dealing with tuberculous diseases in which a mixed infection is demonstrable by the culture test it is proper to combine the inoculations of tuberculin with vaccines of one or more of the complicating bacterial species. That this procedure is conducive to good results in treating the suppurations following tuberculous urinary infection, adenitis, synovitis, or osteitis, I can add my testimony to that of other workers. It also appears to be good practice occasionally to include an inoculation of a staphylococcus vaccine with tuberculin in treating such diseases as pulmonary, glandular, joint or bone tuberculosis, even though a mixed infection is not demonstrable. In how far the use of pneumococcus, streptococcus, or staphylococcus vaccines with tuberculin for handling the corresponding forms of mixed infection in phthisis is valuable, is a point on which my personal experience does not yet allow me to pronounce definitely.

Syphilis and a concurrent or a secondary infection with pyogenic bacteria is another condition in which therapeutic bacterial immunization finds useful application. Some of the earlier English workers in opsonic therapy found that the pus microbe infections of late secondary or tertiary syphilitic ulcers of the skin were more easily handled when inoculations of the causative bacteria were added to the specific medication. The results which I have witnessed in a rupeoid complication of a very extensive cutaneous syphilitic ulceration when inoculations of the patient's *Staphylococcus aureus* were used to reinforce the medicinal agents were such as to emphasize the value of the accessory biologic therapy. In a case in which an acute yellow pus microbe infection of a finger tip appeared as part of an unrecognized syphilitic infection of a wound received during a surgical operation, there was, aside from the ulcerating and suppurating initial lesion, a large neoplastic cellulitis of the corresponding arm, together with the constitutional symptoms of a severe septic state. I was able to control the septic condition and to effect a rapid reduction in the indurated mass by properly spaced inoculations of the autogenous staphylococcus. But healing of the ulcer of the infected finger did not occur until the advent of secondary syphilitic symptoms disclosed the nature of the underlying morbid conditions, and the proper specific medication had been instituted.

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[*] Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

[1] This condensed paper is a supplement to several previous reports which I have made dealing with the theory of opsonins and the practice of therapeutic immunization, as: A Series of Medical and Surgical Affections Treated by Artificial Autoinoculation According to Wright's Theory of Opsonins, THE JOURNAL A. M. A., Feb. 16, 1907; Practical Bacterial Therapy and the Theory of Opsonins, Ohio State Med. Jour., May, 1907; The Enlarging Field of Opsonic or Bacterial Therapy, Ohio State Med. Jour., September, 1907; and the article, Opsonic Therapy, in the forthcoming supplemental volume of the Reference Handbook of the Medical Sciences.

Clinical Notes

THE APPLICATION OF THE BIER CUP IN THE TREATMENT OF RECENT EMPYEMAS.

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DENVER.

The many methods which have been proposed for the surgical treatment of empyema and the physical wrecks we find after this lesion, bear witness to the need for more effective treatment of pyothorax. The chest being a cavity under negative pressure, the normal equilibrium is upset the moment an incision is made for the relief of pus. This condition continues so long as drainage is maintained. A space remains and the lung is slow to expand. This consequently embarrasses Nature's effort at repair, for so long as pneumothorax exists, just so long may we expect a certain lack of lung expansion. The introduction and the presence of the drainage tube into the space also prevents free pulmonic expansion.

To overcome this embarrassment various suction and vacuum devices have been proposed and used, among these being the Van Hook vacuum bottle, which is attached to the patient by a long rubber tube. Bryant has recently proposed and used the Politzer bag deflated and attached to the end of the drainage tube, with the margins of the wound sealed with rubber dam.

Some twelve months ago I proposed and used a ball-valve air check attached to the end of the drainage tube, this device permitting free outward flow of pus, with but little ingress of air. But to use this method successfully the contents of the pus cavity must be free from fibrin and other solid matter, and, as in all these methods, there must be no communication with a bronchus.

Murphy[1] reports the use of a 2 per cent. solution of formaldehyd (40 per cent.) in glycerin in cases of post-pneumonic empyema "without pulmonary gangrene or abscess, and which have no communication with a bronchus." A simple aspiration is first performed, followed immediately by the injection of one or two ounces of the formalin and glycerin solution. He especially emphasizes the necessity of having the solution stand for at least twenty-four hours before being used, and states that it may be repeated several times if necessary. This method seems nearer being the ideal treatment, since it does not produce a pneumothorax nor introduce drainage tubes into the chest cavity.

There are cases, however, which will not respond to this method, as has recently occurred in my own practice. Having had one of these cases in which the latter method failed me, I resected a rib and introduced a double rubber drainage tube, which was left in the cavity for five days. To the ends of this tube I inserted twice daily a strong glass syringe and aspirated the pus and fibrinous débris which had not escaped into the dressings during the interval. After this I covered the opening and the entire incision with a large Bier cup which fitted snugly over the incision. Then producing reasonably strong suction and leaving the cup in position for a period of thirty minutes, the pus and débris would quickly be drawn into the cup. At first the cup required frequent emptying, but after three days there was very little discharge. The pyogenic space soon became obliterated and the lung promptly expanded.

After all discharge had ceased and the incision almost closed, there developed some three inches below the site of the first pyogenic space a tender area associated with a rise in temperature. As this site was some distance from the first single rib resection, it seemed as though it might be necessary either to enlarge the first incision or to make another immediately over the site of the new pocket. A long uterine probe, however, introduced into the old opening and carefully passed down between the two pleuræ, reached and opened this pocket, and the application of the cup soon drained it. Convalescence has, therefore, been secured in four weeks in a case which usually requires as many months.

612 Empire Building.

METHOD OF REMOVING PLUNGER FROM A LUER GLASS HYPODERMIC SYRINGE.

ARTHUR S. HILL, M.D.
LOS ANGELES.

Much annoyance is caused when one attempts to use a glass hypodermic syringe and finds that one failed to wash out the syringe after the last using, that the medicament has recrystallized around the plunger, and that no amount of force short of breaking will loosen it.

To overcome this, remove the metal finger rests and carefully drop the syringe into a test-tube two-thirds full of a 20 per cent. solution of glycerin and water. *Boil for a minute or two over a spirit lamp; then remove*, and holding in a towel while still hot, give a firm twist and the trick is done.

Prehistoric Retrospective Diagnoses.—Probably the most remarkable example of retrospective diagnosis is that afforded by the localized red discoloration of the skull which Smith and Jones have found on the skull of a number of Egyptian mummies more than 5,000 years old. Chemical and other tests have shown that it is the postmortem evidence of a wound inflicted during life. It is thus the retrospective medicolegal testimony to an accidental or criminal traumatism more than fifty centuries ago. The splints found on the fractured limbs of the mummies were mentioned in these columns April 25.

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[1] Practical Medicine Series, 1908, vol. ii, p. 260.

Therapeutics

TROPICAL DYSENTERY.

Dr. R. J. Blackham, in the *Lancet*, Dec. 1, 1906, discusses the nature and treatment of this disease. He defines dysentery as: "An inflammation of the large bowel, associated with pain, tenesmus, some slight pyrexia, and a large number of stools, consisting of mucus or mucopus, with micro-organisms but with or without blood. Blackham thinks that it is important to remember that dysentery may be present without any blood in the stools. Predisposing causes to dysentery seem to be age, occupation, condition and environment. Young children and old people seem to be especially liable to contract dysentery. This is probably because they are less sturdy and less able to throw off the infection. It has been asserted that farmers are more likely to contract the disease than those who work indoors, while workers over furnaces, or in high temperatures, such as stokers and cooks, are likely to contract it. As to the "condition" being a cause, certain it is that anything that diminishes the vitality of the patient, and especially unhygienic surroundings tending to debilitate the patient, predispose to the disease. Overfed or underfed individuals are predisposed, in certain localities, to dysentery, and, of course, diseased or putrid or unripe articles of food may form the culture ground for dysenteric bacteria. A sudden chilling of the body may be an exciting cause.

The two forms of dysentery are amebic, generally a slow chronic condition, although there may be acute attacks, and bacillary dysentery, or the dysentery caused by a specific bacillus. This latter occurs generally as an epidemic, and the specific bacillus that is its cause has been described by various bacteriologists.

The prevention of dysentery is the improvement of the food, water, sewerage and the prevention of such diseases as malaria and typhoid. Anything that prevents these diseases also prevents the development and propagation of dysentery. Any person becoming debilitated from any disease, or any individual weak from age or other cause, should move from regions in which dysentery is likely to occur. Improvement of the hygienic surroundings of many places in tropical countries has reduced the frequency and severity of dysentery. If a region is visited in which dysentery is known to exist or is epidemic, only boiled or sterilized water should be drunk. Such clothing should be worn as to prevent chilling, especially of the abdomen; excesses of food and drink should be avoided, and alcohol taken not at all. Any simple diarrhea should be treated immediately, and strong cathartics should be avoided. Also, every case of diarrhea in tropical regions should be treated as a possible beginning dysentery, and the stools carefully disinfected lest they carry the bacteria that could cause dysentery in others.

Blackham divides the treatment of this disease into that of the acute and chronic forms. The indications in the treatment of the acute form are, to relieve the pain, to avoid irritating the inflamed intestinal mucous membrane, to promote intestinal antisepsis, and to maintain the patient's strength.

To meet the first indication nothing can compare with opium or morphin. The best method is probably to administer the morphin hypodermatically in dose and frequency to stop the pain and quiet the tenesmus. Some writers, however, advise the administration of opium as an enema, and Yeo recommends the administration of 1 c.c. (15 minims) of the tincture of opium (laudanum) in 30 c.c. (1 ounce) of cold liquid starch solution.

To meet the second indication, all food should be avoided that leaves a residue which could irritate the inflamed bowels, hence milk is generally not a proper diet for dysenteric patients, although recommended by many writers. Whey, broths, egg albumin, rice water and barley water make useful diets. If milk is used it should be boiled and diluted with an equal part of barley water and rendered alkaline by the addition of 0.30 gram (5 grains) of sodium bicarbonate and 30 c.c. (1 ounce) of lime water to each pint. If undigested curds of milk appear in the stools the milk should be peptonized or other food substituted.

The third indication is to attempt to produce intestinal antisepsis. This is best done, says Blackham, by salient aperients which sweep all foul accumulations and organisms from the intestinal tract; by the administration of certain drugs said to be specific; and by washing out the lower bowel with astringent and antiseptic fluids. In the tropics, he states, castor oil is the best preliminary treatment, and the dysentery may be checked by such immediate purgative treatment if combined with rest and a non-irritating careful diet for a few days. The best subsequent saline laxative is:

℞.	gm. or c.c.		
Magnesii sulphatis	40		ʒx
Tincturæ zingiberis	10	or	flʒiiss
Acidi sulphurici diluti	3		m. xlv
Aquæ chloroformi	ad 150		ad fl℥v.

M. et Sig.: A tablespoonful, in water, every hour as directed.

Or:

℞.	gm. or c.c.		
Sodii sulphatis	40	or	ʒx
Aquæ fœniculi	150		fl℥v

M. et Sig.: A tablespoonful, in water, every hour, as directed.

"A tablespoonful of either one of these preparations should be given every hour until the movements of the bowels become fecal, and then every three or four hours for one or two days. If the stools become watery and do not become fecal, the saline treatment should be stopped and ipecac treatment resorted to."

The so-called specific treatment of bacillary dysentery or tropical dysentery is that with ipecac. The method of using ipecac in India is, after withholding all nutriment for three hours, to give opium in some form, perhaps best [illegible] as an injection of morphin. and half [illegible] give 2 grams (30 grains) of powdered ipecac.

℞.	gm.		
Pulveris ipecacuanhæ	10	or	ʒiiss

Fac konseals 10.

Sig.: Take two wafers, with a small amount of water, at time directed.

The patient should then lie perfectly quiet and be cautioned not to swallow his saliva, and not allowed to drink any water, and not allowed even to talk. The hypodermic dose of morphin previously given will generally prevent the patient from vomiting the ipecac, and if it is not vomited in about two hours it will have passed into the intestine and the nausea will have ceased. Blackham neglects to state the frequency with which this ipecac should be repeated, but, as generally advised, it should be given in diminishing doses on succeeding days for at least three or four days.

The lavage treatment of dysentery is really only applicable when the disease is subacute or chronic, although cleansing of the lower bowel with plain warm water or warm boric acid solution (a tablespoonful of the boric acid to a pint of water) is sometimes advisable and good treatment, even in the acute form. The disadvantage is the pain which a rectal tube may cause, but a well-oiled small tube or large catheter may be passed, often, almost painlessly, and the soothing, cleansing solution used with gentle pressure, the reservoir not being held too high, will sometimes relieve the tenesmus and prevent movements of the bowels for hours. Blackham also omits speaking of small injections of ice water into the rectum. These also are sometimes valuable in relieving tenesmus and preventing the frequent small movements.

Blackham speaks of the advisability, in malarial regions, of administering quinin in conjunction with the other treatment for dysentery, and believes that in ma- districts it is advisable to administer considerable before the ipecac treatment is begun. When y patients have been deprived of fresh fruit and ables for considerable periods, and perhaps have come scorbutic, lime juice or lemons should be administered.

The most important thing in the treatment of acute dysentery is the maintenance of the patient's strength, and hence there must be the greatest care in the selection of the most nutritious food that furnishes the least bulk to reach the intestine. Blackham does not speak of the advisability of using the expressed juice of beef or strong beef extracts, but many times they are of great advantage and almost a necessity in combating the prostration from this disease.

Warm applications to the bodies of patients who are not feverish and who tend to be cold is an essential factor in preventing collapse. Caffein in the form of black coffee, or as a drug, is spoken of, as:

℞.

	gm.		
Caffeinæ citratæ	2	or	ʒss

Fac capsulas 20.
Sig.: One capsule every six hours.

Strychnin is not mentioned by Blackham, and should perhaps be avoided, if possible, as tending to increase peristalsis, but in conditions of collapse must, of course, be administered, as should, perhaps, atropin.

He speaks of spartein being used with success. Spartein is, however, rather a doubtful circulatory stimulant.

If alcohol is needed it is best used in the form of brandy or champagne. When the temperature is low and the patient feels cold, small doses of brandy, not sufficient to cause cerebral stimulation nor too much vasodilatation, may dilate the surface blood vessels sufficiently to cause a feeling of warmth to the patient and the relief of internal congestions. While not indicated in collapse, it may prevent collapse from occurring by the action just stated. It also has a food value, although alcohol is by no means always indicated in dysentery.

For the treatment of chronic dysentery Blackham quotes Manson's treatment as advisable, viz.: "The administration of 30, 25, 20, 15, 10 and 5 grain doses of powdered ipecac on successive evenings, with rest in bed and a milk diet. He then gives a short course of small doses of castor oil, with or without opium, three times daily, regulating the dose according to the catharsis produced." If this treatment is not successful, he gives an intestinal antiseptic, such as salol (phenylis salicylas) or betanaphthol. If this treatment fails, the resource is then local applications to the mucous membrane of the lower bowel, and nitrate of silver injections are considered the best, although solutions of quinin are considered by Osler the best in amebic dysentery. The method of procedure is as follows: A cathartic dose of castor oil having thoroughly operated, the large bowel is washed out with a boric acid solution (a tablespoonful to a pint), and then about 1,500 c.c. (3 pints) of a 1 to 1,000 to 2 to 1,000 solution of nitrate of silver is passed into the colon. The only pressure used should be that of gravity. Blackham advises directing the patient to retain this injection as long as possible. As the action of nitrate of silver is speedy, and prolonged action and absorption are undesirable, it is much better that this liquid be allowed to flow out in a few minutes after the injection, in fact, it has been advised if the nitrate of silver solution does not quickly return that a sodium chlorid solution be injected to precipitate the nitrate of silver as an insoluble chlorid. This is rarely necessary, however, as peristalsis is caused by the nitrate of silver irritation and the liquid is generally quickly evacuated. This injection of nitrate of silver should be repeated once in four days, if it causes improvement.

It should be remembered that dysentery is a preventable, bacterial disease, and that the organisms may live on clothing for at least three weeks and maintain their virulence in damp soil for months. These germs, however, are readily destroyed by heat or by weak solutions of bichlorid of mercury or weak solutions of phenol. Hence it is inexcusable not to prevent the infection of others by proper disinfection of all the excretions, the bed clothing, and the utensils used about the patient. The room of a dysenteric patient should be thoroughly screened from flies. Blackham also well points out the necessity, when dysentery is epidemic, or in regions where dysentery is frequent, or in patients who have possibly acquired dysenteric contamination from travel, that the stools, even in apparently simple diarrheal cases, should be bacteriologically examined, and from the knowledge thus obtained the individual patient will not only be properly treated, but others may be saved from infection.

FOR REMOVAL OF SUPERFLUOUS HAIR.

The *Druggists Circular*, February, 1908, suggests the following as an efficient depilatory:

℞.

	gm.		
Strontii sulphidi	8		ʒii
Zinci oxidi		or	
Amyli	āā 12		āā. ʒiii

M. et Sig.: To be used according to directions.

[These powders should be thoroughly mixed and kept dry. When needed for use a sufficient quantity should be made into a paste with warm water and applied to the surface to be deprived of its hair. It should remain from one to several minutes, according to the nature of the hair and skin, but should not remain longer than five minutes. The preparation should be removed immediately when any burning action is felt by the patient. "After the removal of the paste the skin should be gently but firmly scraped with a blunt-edged knife (as a paper knife) until the hair is removed.] The surface thus treated should then immediately be washed with warm water and dressed with some simple soothing emollient," as:

℞.

	gm.		
Unguenti zinci oxidi		or	
Unguenti aquæ rosæ	āā 10		ʒiiss

Sig.: Use externally.

MEDICAL SCHOOLS OF THE UNITED STATES

Below is given a brief description of the medical colleges in the United States that are legally chartered to confer the degree of doctor of medicine, and whose diplomas are recognized by at least one state licensing board. The list includes the sectarian as well as the regular colleges, as their graduates are physicians in the eyes of the law. The information given is obtained from reports and from other reliable sources. The year when the first class was graduated is given. Unless otherwise stated, classes were graduated in all subsequent years. Colleges which belong to the Association of American Medical Colleges or the Southern Medical College Association or other organization of colleges have requirements for admission of students according to the rules of these associations, unless their requirements are higher, in which case a statement is made to that effect. Colleges belonging to the associations named and extracts from their rules are given at the close of the list of colleges. Population figures are taken from the United States Bureau of Education estimates for 1906.

ALABAMA.

Alabama, population 2,017,87, has two medical colleges, the Medical Department of the University of Alabama and the Birmingham Medical College, located, respectively, in Mobile and Birmingham. The population of Mobile is 42,903 and of Birmingham 45,869.

Birmingham.

Birmingham Medical College. Avenue F and Twentieth Street. —Chartered in 1894. The first class graduated in 1895. There are 21 professors and 14 assistants, total 35. The course of instruction embraces four separate sessions of seven months each. The fees are $75 for each of the first three years and $100 for the fourth. The Dean is Dr. B. L. Wyman. Registration, 1907-8, 134; graduates, 16. The fifteenth session begins Oct. 5, 1908, and ends May 5, 1909.

Mobile.

Medical Department of the University of Alabama. St. Anthony and Lawrence Sts.—Organized in 1859 as the Medical College of Alabama. Classes were graduated in 1861 and in all subsequent years except 1862 to 1868, inclusive. It was reorganized as the Medical Department of the University of Alabama in 1897. All property was transferred to the University of Alabama and the present title assumed in 1907. The faculty consists of 8 professors and 13 lecturers and assistants, a total of 21. The course of study covers four years of seven months each. The total fees for each of the first three years is $100; for the fourth year, $125. The Dean is Dr. Rhett Goode. The total registration for 1907-8 was 169; graduates, 25. The forty-third session begins Oct. 1, 1908, and ends May 1, 1909.

ARKANSAS.

Arkansas, population 1,421,574, has two medical colleges, the Medical Department of the University of Arkansas and the College of Physicians and Surgeons, both located in Little Rock, a city of 39,959 people.

Little Rock.

University of Arkansas Medical Department. Second and Sherman Streets.—Organized in 1879 as the Arkansas Industrial University. The first class graduated in 1880. It assumed the present title in 1899. The faculty consists of 18 professors and 10 lecturers and assistants, total 28. The course of study covers four years of seven months each. The fees are: Matriculation, $5, paid but once; tuition, per year, $60; graduation fee, $25. The Dean is Dr. James H. Lenow. Total registration, 1907-8, was 177; graduates, 19. The thirtieth session begins Oct. 1, 1908, and ends May 1, 1909.

College of Physicians and Surgeons. Lincoln Avenue, north of the Union Station.—It was organized in 1906. The first class graduated in 1907. The faculty consists of 30 professors and 8 lecturers and assistants, a total of 38. The course of study covers four years of seven months each. The Dean is Dr. J. P. Runyan. The total registration for 1907-8 was 87; graduates, 15. The third session begins Oct. 1, 1908, and ends April 30, 1909.

CALIFORNIA.

California, population 1,648,049, has eight medical colleges. Four are located in San Francisco, a city having, before the earthquake, 355,919 inhabitants. They are Cooper Medical College, Medical Department of the University of California, Hahnemann Medical College of the Pacific and the College of Physicians and Surgeons. The College of Medicine of the University of Southern California, the College of Physicians and Surgeons and the California Eclectic Medical College are situated in Los Angeles, population 116,420. The Oakland College of Medicine and Surgery is in Oakland, population 73,812.

Los Angeles.

University of Southern California. College of Medicine. Buena Vista Street, between Ord and Alpine streets.—Organized in 1885. The first class graduated in 1888. It has a faculty of 33 professors and 39 lecturers and assistants, a total of 72. The course covers four years of eight months each. The fees for each year are $115. The Dean is Dr. W. Jarvis Barlow. The total registration for 1907-8 was 89; graduates, 26. The twenty-fourth session begins Oct. 1, 1908, and ends June 11, 1909.

College of Physicians and Surgeons. 516 E. Washington Street.—It was organized in 1903. The first class graduated in 1905. The course covers four years of nine months each. The faculty consists of 32 professors and 7 lecturers and instructors, a total of 39. The Dean is Dr. Charles W. Bryson, Delta Building, Los Angeles. The registration for 1907-8 was 37, graduates 10. The sixth session begins Sept. 26, 1908, and ends June 26, 1909.

California Eclectic Medical College. 846 Lyon Street.—Organized in 1879 at Oakland as the California Medical College. Removed to San Francisco in 1887. Suspended in 1906. Reorganized at Los Angeles with the present title in 1907. Classes were graduated in 1880, and in all subsequent years except 1907. It has a faculty of 27 professors. The Dean is Dr. J. A. Munk. The registration for 1907-8 was 8, one graduate. The twenty-ninth session begins Sept. 14, 1908, and ends May 24, 1909.

Oakland.

Oakland Collegd of Medicine and Surgery. Thirty-first and Grove streets.—Organized in 1900, opened in 1902. The first class graduated in 1906. The faculty numbers 30. The course covers four years of nine months each, and the classes are limited to ten students each. The tuition fee is $150 yearly. The Registrar is Dr. Edward N. Ewer. The total registration for 1907-8 was 10; one graduate. The seventh session begins Aug. 19, 1908, and ends about May 21, 1909.

San Francisco.

Cooper Medical College. Sacramento and Webster streets.—Organized in 1858 as the Medical Department of the University of the Pacific. Discontinued in 1864. Revived in 1870. It became the Medical College of the Pacific, Medical Department of the University College of San Francisco in 1873. The present title was assumed in 1882. Classes were graduated in 1860, and in all subsequent years, except 1865 to 1869, inclusive. Steps have been taken looking toward a union with Leland Stanford Junior University. The faculty consists of 18 professors and 41 lecturers, instructors, etc., 59 in all. The course covers four years of eight and and a half months each. Fees: Matriculation, $5; course fee for each year, $150; laboratory fee for each year $10; breakage deposit each year, $10; graduation fee, $25; no other charges. The Secretary is Dr. William Fitch Cheney. Total registration for 1907-8 was 97; graduates, 24. The fortieth session begins Aug. 15, 1908, and ends May 6, 1909.

University of California. Medical Department. Second and Parnassus avenues.—Organized in 1863 as the Toland Medical College. The first class graduated in 1865. In 1872 it became the Medical Department of the University of California. The first two years are given at Berkeley. The last two are clinical years at San Francisco. The faculty is composed of 17 professors and 40 associates and assistants, a total of 57. The course covers four years of nine months each. Three full years' college work is required of all applicants for admission. The fees are: Matriculation, $5; tuition, $150 each year; laboratory fees extra. The Dean is Dr. Arnold A. D'Ancona. Total registration for 1907-8 was 36; graduates, 16. The thirty-sixth session begins Aug. 17, 1908, and ends May 12, 1909.

Hahnemann Medical College of the Pacific. Homeopathic. Sacramento and Maple streets.—Organized in 1881 as the Hahnemann Medical College. The first class graduated in 1884. In 1888 it became the Hahnemann Hospital College of San Francisco. It assumed the present name in 1902. It has a faculty of 19 professors and 13 lecturers, instructors, etc., a total of 32. The course covers four weeks of seven months each. Total fees for the first year are $155, and $100 for each of the other three. The Dean is Dr. James W. Ward, 1380 Sutter Street. The total registration for 1907-8 was 33; graduates, 9. The 27th session begins Sept. 9, 1908, and ends May 27, 1909.

College of Physicians and Surgeons. 344 Fourteenth Street. —Organized in 1896. The first class graduated in 1897. The faculty numbers 45. The course covers four years of thirty weeks each. The Dean is Dr. D. A. Hodghead. Registration for 1907-8 was 70; graduates, 16. The thirteenth session begins Sept. 14, 1908, and ends May 12, 1909.

COLORADO.

Colorado, with a population of 615,570, has three medical colleges. Two of these, Denver and Gross College of Medicine and the Denver College of Physicians and Surgeons, are in Denver, which has a population of 151,920, the other, the Colorado School of Medicine, is at Boulder, population 6,150.

The lavage treatment of dysentery is really only applicable when the disease is subacute or chronic, although cleansing of the lower bowel with plain warm water or warm boric acid solution (a tablespoonful of the boric acid to a pint of water) is sometimes advisable and good treatment, even in the acute form. The disadvantage is the pain which a rectal tube may cause, but a well-oiled small tube or large catheter may be passed, often, almost painlessly, and the soothing, cleansing solution used with gentle pressure, the reservoir not being held too high, will sometimes relieve the tenesmus and prevent movements of the bowels for hours. Blackham also omits speaking of small injections of ice water into the rectum. These also are sometimes valuable in relieving tenesmus and preventing the frequent small movements.

Blackham speaks of the advisability, in malarial regions, of administering quinin in conjunction with the other treatment for dysentery, and believes that in malarial districts it is advisable to administer considerable quinin before the ipecac treatment is begun. When dysentery patients have been deprived of fresh fruit and vegetables for considerable periods, and perhaps have become scorbutic, lime juice or lemons should be administered.

The most important thing in the treatment of acute dysentery is the maintenance of the patient's strength, and hence there must be the greatest care in the selection of the most nutritious food that furnishes the least bulk to reach the intestine. Blackham does not speak of the advisability of using the expressed juice of beef or strong beef extracts, but many times they are of great advantage and almost a necessity in combating the prostration from this disease.

Warm applications to the bodies of patients who are not feverish and who tend to be cold is an essential factor in preventing collapse. Caffein in the form of black coffee, or as a drug, is spoken of, as:

℞.	gm.		
Caffeinæ citratæ	2	or	ʒss

Fac capsulas 20.

Sig.: One capsule every six hours.

Strychnin is not mentioned by Blackham, and should perhaps be avoided, if possible, as tending to increase peristalsis, but in conditions of collapse must, of course, be administered, as should, perhaps, atropin.

He speaks of spartein being used with success. Spartein is, however, rather a doubtful circulatory stimulant.

If alcohol is needed it is best used in the form of brandy or champagne. When the temperature is low and the patient feels cold, small doses of brandy, not sufficient to cause cerebral stimulation nor too much vasodilatation, may dilate the surface blood vessels sufficiently to cause a feeling of warmth to the patient and the relief of internal congestions. While not indicated in collapse, it may prevent collapse from occurring by the action just stated. It also has a food value, although alcohol is by no means always indicated in dysentery.

For the treatment of chronic dysentery Blackham quotes Manson's treatment as advisable, viz.: "The administration of 30, 25, 20, 15, 10 and 5 grain doses of powdered ipecac on successive evenings, with rest in bed and a milk diet. He then gives a short course of small doses of castor oil, with or without opium, three times daily, regulating the dose according to the catharsis produced." If this treatment is not successful, he gives an intestinal antiseptic, such as salol (phenylis salicylas) or betanaphthol. If this treatment fails, the resource is then local applications to the mucous membrane of the lower bowel, and nitrate of silver injections are considered the best, although solutions of quinin are considered by Osler the best in amebic dysentery. The method of procedure is as follows: A cathartic dose of castor oil having thoroughly operated, the large bowel is washed out with a boric acid solution (a tablespoonful to a pint), and then about 1,500 c.c. (3 pints) of a 1 to 1,000 to 2 to 1,000 solution of nitrate of silver is passed into the colon. The only pressure used should be that of gravity. Blackham advises directing the patient to retain this injection as long as possible. As the action of nitrate of silver is speedy, and prolonged action and absorption are undesirable, it is much better that this liquid be allowed to flow out in a few minutes after the injection, in fact, it has been advised if the nitrate of silver solution does not quickly return that a sodium chlorid solution be injected to precipitate the nitrate of silver as an insoluble chlorid. This is rarely necessary, however, as peristalsis is caused by the nitrate of silver irritation and the liquid is generally quickly evacuated. This injection of nitrate of silver should be repeated once in four days, if it causes improvement.

It should be remembered that dysentery is a preventable, bacterial disease, and that the organisms may live on clothing for at least three weeks and maintain their virulence in damp soil for months. These germs, however, are readily destroyed by heat or by weak solutions of bichlorid of mercury or weak solutions of phenol. Hence it is inexcusable not to prevent the infection of others by proper disinfection of all the excretions, the bed clothing, and the utensils used about the patient. The room of a dysenteric patient should be thoroughly screened from flies. Blackham also well points out the necessity, when dysentery is epidemic, or in regions where dysentery is frequent, or in patients who have possibly acquired dysenteric contamination from travel, that the stools, even in apparently simple diarrheal cases, should be bacteriologically examined, and from the knowledge thus obtained the individual patient will not only be properly treated, but others may be saved from infection.

FOR REMOVAL OF SUPERFLUOUS HAIR.

The *Druggists Circular*, February, 1908, suggests the following as an efficient depilatory:

℞.	gm.		
Strontii sulphidi	8		ʒii
Zinci oxidi		or	
Amyli	āā 12		āā. ʒiii

M. et Sig.: To be used according to directions.

[These powders should be thoroughly mixed and kept dry. When needed for use a sufficient quantity should be made into a paste with warm water and applied to the surface to be deprived of its hair. It should remain from one to several minutes, according to the nature of the hair and skin, but should not remain longer than five minutes. The preparation should be removed immediately when any burning action is felt by the patient. "After the removal of the paste the skin should be gently but firmly scraped with a blunt-edged knife (as a paper knife) until the hair is removed.] The surface thus treated should then immediately be washed with warm water and dressed with some simple soothing emollient," as:

℞.	gm.		
Unguenti zinci oxidi		or	
Unguenti aquæ rosæ	āā 10		ʒiiss

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University of Southern California, College of Medicine. Buena Vista Street, between Ord and Alpine streets.—Organized in 1885. The first class graduated in 1888. It has a faculty of 33 professors and 39 lecturers and assistants, a total of 72. The course covers four years of eight months each. The fees for each year are $115. The Dean is Dr. W. Jarvis Barlow. The total registration for 1907-8 was 89; graduates, 26. The twenty-fourth session begins Oct. 1, 1908, and ends June 11, 1909.

College of Physicians and Surgeons. 516 E. Washington Street.—It was organized in 1903. The first class graduated in 1905. The course covers four years of nine months each. The faculty consists of 32 professors and 7 lecturers and instructors, a total of 39. The Dean is Dr. Charles W. Bryson, Delta Building, Los Angeles. The registration for 1907-8 was 37, graduates 10. The sixth session begins Sept. 26, 1908, and ends June 26, 1909.

California Eclectic Medical College. 846 Lyon Street.—Organized in 1879 at Oakland as the California Medical College. Removed to San Francisco in 1887. Suspended in 1906. Reorganized at Los Angeles with the present title in 1907. Classes were graduated in 1880, and in all subsequent years except 1907. It has a faculty of 27 professors. The Dean is Dr. J. A. Munk. The registration for 1907-8 was 8, one graduate. The twenty-ninth session begins Sept. 14, 1908, and ends May 24, 1909.

Oakland.

Oakland Collegd of Medicine and Surgery. Thirty-first and Grove streets.—Organized in 1900, opened in 1902. The first class graduated in 1906. The faculty numbers 30. The course covers four years of nine months each, and the classes are limited to ten students each. The tuition fee is $150 yearly. The Registrar is Dr. Edward N. Ewer. The total registration for 1907-8 was 10; one graduate. The seventh session begins Aug. 19, 1908, and ends about May 21, 1909.

San Francisco.

Cooper Medical College. Sacramento and Webster streets.—Organized in 1858 as the Medical Department of the University of the Pacific. Discontinued in 1864. Revived in 1870. It became the Medical College of the Pacific, Medical Department of the University College of San Francisco in 1873. The present title was assumed in 1882. Classes wer [illegible] and in all subsequent years, except 1865 t[illegible]teps have been taken looking toward a union [illegible] Junior University. The faculty consists of [illegible]1 lecturers, instructors, etc., 59 in all. The course covers four years of eight and and a half months each. Fees: Matriculation, $5; course fee for each year, $150; laboratory fee for each year $10; breakage deposit each year, [illegible] $25; no other charges. The Secretary is Dr. [illegible] Total registration for 1907-8 was 97; graduat[illegible] session begins Aug. 15, 1908, and ends May 6, 1909.

University of California, Medical Department. Second and Parnassus avenues.—Organized in 1863 as the Toland Medical College. The first class graduated in 1865. In 1872 it became the Medical Department of the University of California. The first two years are given at Berkeley. The last two are clinical years at San Francisco. The faculty is composed of 17 professors and 40 associates and assistants, a total of 57. The course covers four years of nine months each. Three full years' college work is required of all applicants for admission. The fees are: Matriculation, $5; tuition, $150 each year; laboratory fees extra. The Dean is Dr. Arnold A. D'Ancona. Total registration for 1907-8 was 36; graduates, 16. The thirty-sixth session begins Aug. 17, 1908, and ends May 12, 1909.

Hahnemann Medical College of the Pacific. Homeopathic. Sacramento and Maple streets.—Organized in 1881 as the Hahnemann Medical College. The first class graduated in 1884. In 1888 it became the Hahnemann Hospital College of San Francisco. It assumed the present name in 1902. It has a faculty of 19 professors and 13 lecturers, instructors, etc., a total of 32. The course covers four weeks of seven months each. Total fees for the first year are $155, and $100 for each of the other three. The Dean is Dr. James W. Ward, 1380 Sutter Street. The total registration for 1907-8 was 33; graduates, 9. The 27th session begins Sept. 9, 1908, and ends May 27, 1909.

College of Physicians and Surgeons. 344 Fourteenth Street.—Organized in 1896. The first class graduated in 1897. The faculty numbers 45. The course covers four years of thirty weeks each. The Dean is Dr. D. A. Hodghead. Registration for 1907-8 was 70; graduates, 16. The thirteenth session begins Sept. 14, 1908, and ends May 12, 1909.

COLORADO.

Colorado, with a population of 615,570, has three medical colleges. Two of these, Denver and Gross College of Medicine and the Denver College of Physicians and Surgeons, are in Denver, which has a population of 151,920, the other, the Colorado School of Medicine, is at Boulder, population 6,150.

Boulder.

University of Colorado School of Medicine.—Organized in 1883. Classes were graduated in 1885 and in all subsequent years, except 1898 and 1899. The faculty embraces 23 professors and 16 lecturers and assistants, a total of 39. The work embraces a graded course of four years of nine months each. The tuition is $50 per year; there are no other fees. The Dean is Dr. William P. Harlow. The total registration for 1907-8 was 62; graduates, 11. The twenty-seventh session begins Sept. 14, 1908, and ends June 4, 1909.

Denver.

The Denver and Gross College of Medicine, 1025 Fourteenth Street.—It is the Medical Department of the University of Denver. Organized in 1902 by the union of the Gross Medical College (organized in 1887) with the Denver College of Medicine (organized in 1880). Classes were graduated in 1903 and in all subsequent years. The faculty is made up of 33 professors, 38 assistants and instructors, a total of 71. The course covers four years of eight months. Fees for the first year are $115. For the second year, $116. Third year, $101. Fourth year, $126 The dean is Dr. Walter A. Jayne, 416 McPhee Building. The total registration for 1907-8 was 79; graduates, 22. The twenty-seventh session begins Sept. 8, 1908, and ends May 13, 1909.

Denver College of Physicians and Surgeons (Panpathic), 1317 Fourteenth Street.—Organized in 1894 as the Denver Homeopathic College. The name was changed in 1907 to the Westminster University College of Medicine and again in 1908 to the present title. Since 1907 it has offered to teach all systems of medicine. The Dean is Dr. J. B. Kinley. The total registration for 1907-8 was 46; graduates 6. Next session begins Sept. 7, 1908, and ends May 13, 1909.

CONNECTICUT.

Connecticut, with a population of 1,005,716, has only one medical college, located in New Haven, population 121,227.

New Haven.

Yale Medical School, York and Chapel Streets.—This is the Department of Medicine of Yale University. In 1810 a charter was granted for the establishment of this school, and in 1813 it was organized as the Medical Institution of Yale College. In 1879 the name was changed to the one now used. The first class graduated in 1814. The faculty consists of 12 professors and 44 lecturers and assistants, a total of 56. The course covers four years of nine months each. The fees are $150 each year; in the first year there are additional fees amounting to $18, and in the second $8, and there is a graduation fee of $10. The Dean is Dr. Herbert E Smith, New Haven. The total registration for 1907-8 was 136; graduates, 29. The ninety-sixth session begins Sept. 24, 1908, and ends June 25, 1909.

DISTRICT OF COLUMBIA.

Washington, population 307,716, has three medical colleges: George Washington University Department of Medicine, Georgetown University School of Medicine and Howard University Medical Department.

Washington.

George Washington University, Department of Medicine, 1325 H Street, N. W.—Organized in 1825 as the National Medical College, Medical Department of Columbian College. Classes were graduated in 1826 and in all subsequent years, except 1834 to 1838 and 1861 to 1863, inclusive. The original title was changed to Medical Department of Columbian University in 1873. In 1904, by an act of Congress, it received its present title. The faculty is composed of 43 professors and 33 instructors, demonstrators and assistants, a total of 76. Beginning with the session of 1909-10 matriculants must present credentials of two years' work in a college of liberal arts or its equivalent. The course covers four years of eight months each. The total fees for the first year are $157; for the second year, $152; for the third year, $112, and for the fourth year, $162. The Dean is Dr. W. F. R. Phillips, 1607 Sixteenth Street, N. W. The total registration for 1907-8 was 198; graduates, 45. The eighty-seventh session begins Sept. 30, 1908, and ends June 9, 1909.

Georgetown University, School of Medicine, 920 H Street, N. W.—Organized in 1851. The first class graduated in 1852. The faculty contains 20 professors, 54 instructors and assistants; total, 74. The course of study covers four terms of eight and one-half months each. The fees are $150 each year. The Dean is Dr. George M. Kober, 1600 T Street. The registration for 1907-8 was 82; graduates, 27. The fifty-eighth session begins Sept. 27, 1908, and ends June 11, 1909.

Howard University, Medical Department, Fifth and W Streets, N. W.—Chartered in 1867. Organized in 1869. The first class graduated in 1871. Colored students compose a majority of those in attendance. The faculty comprises 20 professors and 18 lecturers and assistants, 38 in all. The course covers four years of eight months each. The fees of each session are $100, plus $10 for graduation. The Dean is Dr. Robert Reyburn, 2129 F Street. Registration for 1907-8 was 205; graduates, 28. The forty-first session begins Oct. 1, 1908, and ends May 26, 1909.

GEORGIA.

Georgia, population 2,443,719, has four medical colleges: Medical College of Georgia, located in Augusta, population 43,125; Atlanta College of Physicians and Surgeons, Atlanta School of Medicine, and the Georgia College of Eclectic Medicine and Surgery, are in Atlanta, a city of 104,984 population.

Atlanta.

Atlanta College of Physicians and Surgeons, Butler and Armstrong Streets.—Organized in 1898 by union of the Atlanta Medical College, organized in 1855, and Southern Medical College, organized in 1878. The first class graduated in 1899. It has a faculty of 22 professors and 27 assistants, a total of 49. The course of study covers four years of seven months each. Fees: First and second years, $75 each; third and fourth, $100 each. The Dean is Dr. W. S. Elkins, 29 Luckie Street. Total registration of students for 1907-8 was 234; graduates 29. The eleventh session begins Sept. 28, 1908, and ends May 1, 1909.

Atlanta School of Medicine, Luckie, Barton and Cain Streets. —Organized in September, 1905. The first class, graduated in 1906. The course covers four years of seven months each. It has a faculty of 13 professors and 27 lecturers and assistants, a total of 40. The Proctor is Dr. Edward G. Jones. The total registration for 1907-8 was 274; graduates, 48. The fourth session begins Sept. 25, 1908, and ends April 23, 1909.

Georgia College of Eclectic Medicine and Surgery, Tanner Street, near Edgewood Avenue.—Organized in 1877 as the Georgia Eclectic Medical College. In 1881 it acquired the charter of the College of American Medicine and Surgery. It assumed its present name in 1886. The first class graduated in 1878. The Proctor is Dr. E. B. Thomas. Total registration for 1907-8 was 71; graduates, 23.

Augusta.

Medical College of Georgia, Sixth and Telfair Streets.—Organized in 1828 as the Medical Academy of Georgia, the name being changed to the Medical College of Georgia in 1829. Since 1873 it has been known as the Medical Department of the University of Georgia. Classes were graduated in 1833 and in all subsequent years, except 1862 and 1863, inclusive. The faculty includes 17 professors and 11 assistants, 28 in all. The course is four years of seven months each. Fees for the first two years are $75 each; third year, $100, and $130 for the last year. The Dean is Dr. Joseph Eve Allen. The total enrollment for 1907-8 was 113; graduates, 32. The seventy-seventh session begins Oct. 1, 1908, and ends May 1, 1909.

ILLINOIS.

Illinois, population 5,418,670, has thirteen medical colleges, four of which are night schools, all located in Chicago, a city of 2,049,185 inhabitants, and are as follows: Rush Medical College, Northwestern University Medical School, College of Physicians and Surgeons, Hahnemann Medical College, Bennett College of Eclectic Medicine and Surgery, Hering Medical College, Jenner Medical College, Illinois Medical College, American Medical Missionary College, College of Medicine and Surgery, National Medical University, Chicago College of Medicine and Surgery and Reliance Medical College.

Chicago.

Rush Medical College.—This school was founded in 1837, organized in 1843, was the medical department of Lake Forest University from 1887 until 1898, when it became affiliated with the University of Chicago. The first class graduated in 1844. The faculty is composed of 83 professors, 155 associates, instructors, etc., a total of 238. The requirements for admission are a four-year high school education and, in addition thereto, two years of college work, including courses in college chemistry, physics and biology, and a reading knowledge of German or French. The course covers four years of nine months each. An optional fifth year, consisting of a hospital interneship or of a fellowship in one of the departments is offered. All freshman and sophomore studies are given at the University of Chicago. The last two years are given in the clinical buildings at the corner of Wood and Harrison Streets. The total fees are $180 each year. A matriculation fee of $5 is paid but once, and there are incidentals amounting to from $2 to $5 annually. The Deans are Dr. Frank Billings, 100 State Street, and Dr. John M. Dodson, 34 Washington Street. Total registration, 1907-8, was 586; graduates, 70. The sixty-sixth fiscal year begins July 1, 1908.

Northwestern University Medical School, Dearborn Street, between Twenty-fourth and Twenty-fifth Streets.—Organized in 1859 as the Medical Department of Lind University. In 1864 it became independent as the Chicago Medical College. It united with Northwestern University in 1869, but retained the name of Chicago Medical College until 1891, when the present name was taken. The faculty comprises 150 professors and 83 lecturers and assistants, a total of 233. The requirements for admission are such as will admit to the College of Liberal Arts of Northwestern University plus one year of college work in physics, chemistry, biology and modern languages. The course covers four years of thirty-six weeks each. The fees are $175 each year. A matriculation fee of $5 is paid but once. The Secretary is Dr. Charles Louis Mix. The total registration for 1907-8 was 533; graduates, 135. The forty-ninth session begins Oct. 6, 1908, and ends about June 15, 1909.

College of Physicians and Surgeons, Honore and Congress Streets.—Organized in 1882. The first class graduated in 1883. It became the Medical Department of the University of Illinois in 1896. The faculty is composed of 42 professors, 156 assistants and instructors, a total of 198. The fees are $145 each for the first two years, $150 for the third, and $175 for the fourth year. The Dean is Dr. William E. Quine, 103 State Street. Total registration for 1907-8 was 501; graduates, 146. The twenty-seventh session begins Oct. 1, 1908, and ends June 9, 1909.

American Medical Missionary College, 888 Thirty-fifth Place. —Organized in 1895. The first class graduated in 1899. The faculty numbers 27. The course covers four years of nine months each. Total fees are $80 for each of the four years. The Secretary is Dr. E. L. Eggleston, Battle Creek, Mich. Total registration for 1907-8 was 42; graduates, 4. The fourteenth session opens Sept. 15, 1908, and closes June 15, 1909.

Chicago College of Medicine and Surgery, 333 South Lincoln Street.—Organized in 1901 as the American College of Medicine and Surgery (Chicago Eclectic Medical College). The latter part of the name was dropped in 1902 when it became the Medical Department of Valparaiso University. Eclecticism was dropped in 1905. The name was changed to the above in 1907. The course covers four years of eight months each. The faculty consists of 52 professors and 18 lecturers and assistants; total of 70. The annual tuition fee is $100; matriculation fee, $5. The total registration for 1907-8 was 325; graduates, 70. The eighth session begins Sept. 29, 1908, and ends May 18, 1909. The Secretary is Dr. J. N. Roe.

Hahnemann Medical College and Hospital of Chicago, 2811 Cottage Grove Avenue.—Organized in 1859. The first class was graduated in 1861. The Registrar is Dr. W. Henry Wilson. The total registration for 1907-8 was 117; graduates, 43. forty-ninth session begins Sept. 21, 1908, and ends May 15, 1909.

Hering Medical College, Homeopathic, Wood and York Streets. —Organized in 1892. The first class graduated in 1893. The Dean is Dr. H. C. Allen. The total registration for 1907-8 was 58; graduates, 16.

Illinois Medical College, Corner Washington Boulevard and Halsted Street.—It was organized in 1894. Classes were graduated in 1895 and in all subsequent years. The faculty consists of 38 professors and 20 lecturers and assistants, a total of 58. The course covers four years of seven months each. The fees are about $125 each year. The Dean is Dr. B. B. Eads. The total registration for 1907-8 was 53; graduates, 30. The fourteenth session begins Sept. 2, 1908, and ends Apr. 29, 1909.

Bennett College of Eclectic Medicine and Surgery, Fulton and Ada Streets.—Organized in 1868. The first class graduated in 1870. The faculty numbers 52. The course covers four years of thirty weeks each. Fees for each year are $100, with a matriculation fee, paid once, of $5. The President is Dr. John D. Robert The total registration for 1907-8 was 150; graduates, 28. The next session begins Sept. 22, 1908, and ends May 24, 1909.

College of Medicine and Surgery, Physio-Medical, 370 South Wood Street.—Organized in 1885 as the Chicago Physio-Medical Institute. The first class graduated in 1886. In 1891 the name was changed to the Chicago Physio-Medical College. In 1899 it took its present name. The Secretary is Dr. William F. Schaare. The total registration for 1907-8 was 35; graduates, 3. The next session begins Sept. 23, 1908, and ends May 15, 1909.

Jenner Medical College, a night school, located at 196 East Washington Street.—Organized in 1892. Classes were graduated in 1896 and in all subsequent years. Registrar, Dr. J. Zabokrtsky. Total registration for 1907-8 was 175; graduates, 32. *The Illinois State Board of Health reports that this college is not in good standing.*

National Medical University, a night school, located at 531 Wells Street.—Organized in 1891 as the National Homeopathic Medical College. The first class was graduated in 1902. In 1895 the word "Homeopathic" was dropped. It took the above name in 1900. Registration for 1907-8 was 123. The Dean is Dr. L. D. Rogers. *The Illinois State Board of Health reports that this school is not in good standing.*

Reliance Medical College. A night school, located at Washington Boulevard and Halsted Street.—Organized in 1907. Registration for 1907-8 was 62. No graduates. The President is Dr. J. F. Burkholder. *The Illinois State Board of Health reports that this school has not been placed in good standing.*

INDIANA.

Indiana, population 2,710,898, has two medical colleges, the Indiana University School of Medicine, and the Physio-Medical College of Indiana. Both are located at Indianapolis, a city of 219,154 people, except that the work of the first two years of the Indiana University School of Medicine is offered also at Bloomington, population 5,000, the seat of the University.

Bloomington and Indianapolis.

Indiana University School of Medicine.—Organized in 1890, but gave only a premedical course until 1905, when all the subjects of the first two years were offered. In 1907, by union with the State College of Physicians and Surgeons, the complete course in medicine was offered. In 1908 the Indiana Medical College, which was formed in 1907 by the merger of the Medical College of Indiana (organized in 1869), the Central College of Physicians and Surgeons (organized in 1879) and the Fort Wayne College of Medicine (organized in 1879) merged into it. The faculty consists of 99 professsors and 76 lecturers, associates and assistants, a total of 175. In 1910, besides a four-year high school education, one year of collegiate work will be required for admission. The work of the first two years may be taken either at Bloomington or at Indianapolis. The clinical work is all done at Indianapolis. The Secretary at Bloomington is Dr. B. D. Myers; at Indianapolis, Dr. Edmund D. Clark, Newton-Claypool Bldg. The total registration for 1907-8 was 308; graduates, 73. The next session begins Sept. 22, 1908, and ends June 23, 1909.

Physio-Medical College of Indiana. Fourteenth Street and College Avenue.—Organized in 1873. The first class graduated in 1874. The Dean is Dr. C. T. Bedford. The total registration for 1907-8 was 24; graduates, 5. The next session begins Sept. 8, 1908, and ends May 4, 1909.

IOWA.

Iowa, population 2,205,690, has five medical colleges. The College of Medicine of the State University of Iowa and the College of Homeopathic Medicine of the State University of Iowa are located in Iowa City, population 8,497. In Des Moines, population 78,323, is the College of Medicine of Drake University. In Sioux City, population 42,520, is the Sioux City College of Medicine. In Keokuk, population 14,597, is the Keokuk Medical College, College of Physicians and Surgeons.

Des Moines.

Drake University College of Medicine.—First two years given on the University Campus, University Avenue, between Twenty-fifth and Twenty-eighth Streets, the clinical years at Fourth and Center Streets. Organized in 1882 as the Iowa College of Physicians and Surgeons. The first class graduated in 1883. In 1887 it became affiliated with and in 1900 became the Medical Department of Drake University. The faculty consists of 18 professors and 26 assistants, a total of 44. The work covers four years of nine months each. The total fees for the first two years are $107 each; for the last two years, $80 each. The Dean is Dr. D. S. Fairchild. The total registration for 1907-8 was 75; graduates, 18. The twenty-sixth session begins Sept. 14, 1908, and ends June 16, 1909.

Iowa City.

State University of Iowa College of Medicine. University Campus.—Organized in 1869. First session began in 1870. First class graduated in 1871. The faculty is made up of 10 professors, 17 lecturers, demonstrators and assistants, a total of 27. The course of study covers four years of thirty-six weeks each. Total *fees for each year are $50. The Dean is Dr. James R. Guthrie,* Dubuque; Vice-Dean, Dr. Walter L. Bierring, Iowa City. Total number of students registered for 1907-8 was 266; graduates, 43. The thirty-ninth session begins Sept. 20, 1908, and ends June 18, 1909.

State University of Iowa College of Homeopathic Medicine. —Organized in 1877. The first class graduated in 1878. The faculty is composed of 5 professors and 31 lecturers and assistants, total of 36. The work of the first two years is taken in classes with the students of the College of Medicine of the State University of Iowa. The fees are $50 each year. The Dean is Dr. George Royal. Total registration for 1907-8 was 43; graduates, 9. The thirty-second session begins Sept. 20, 1908, and ends June 18, 1909.

Keokuk.

Keokuk Medical College, College of Physicians and Surgeons. Seventh and Blondeau Streets.—Organized in 1849 as the College of Physicians and Surgeons. The first class was graduated in 1850. In 1854 it became the Medical Department of the State University of Iowa, but resumed its former name in 1870. In 1899 it merged with the Keokuk Medical College (organized in 1890) and assumed the present title. The faculty is composed of 20 professors and 8 assistants and demonstrators, 28 in all. The course covers four years of eight months each. The total fees for the first year are $66; for the second, $61; for the third, $64, and $61 for the last year. The Secretary is Dr. W. B. La Force. Total registration for 1907-8 was 115; graduates, 37. The sixtieth session begins about Sept 15, 1908, and ends about May 15, 1909.

Sioux City College of Medicine. Corner of Fourteenth and Jones Streets.—Organized in 1891. The first class graduated in 1893. The total registration for 1907-8 was 26; graduates, 9. The Dean is Dr. F. E. Franchere.

KANSAS.

Population, 1,612,471, has three medical colleges. Kansas Medical College is in Topeka, population 41,880, and the Western Eclectic College of Medicine and Surgery is at Kansas City. The School of Medicine of the University of Kansas gives its first two years in Lawrence, population 12,123, and the last two years in Rosedale, a suburb of the two Kansas Cities, which together have a population of 260,288.

Kansas City.

Western Eclectic College of Medicine and Surgery. Central and Simpson Avenues.—Organized at Kansas City, Mo., in 1898 as the Eclectic Medical University. Moved to Kansas City, Kan., in 1907. Took the present name in 1908. First class graduated in 1900. The faculty numbers 34. Fees, $90 per year; graduation fee, $15. Course covers four years of about eight months each. The Secretary is Dr. C. E. Frazier. The total registration for 1907-8 was 41; graduates, 11. The eleventh session begins Sept. 7, 1908, and ends April 30, 1909.

Lawrence and Kansas City.

University of Kansas School of Medicine.—Organized in 1880. In 1905 it merged with the Kansas City (Mo.) Medical College, founded in 1869, the College of Physicians and Surgeons, founded in 1894, and the Medico-Chirurgical College, founded in 1897. *The faculty, including lecturers and clinical assistants, numbers* 79. The course covers four years of about nine months each. The total fees are, for the first two years, $60 per year (and for non-residents of the state $70); for the last two years, $100 per year. The Dean at Lawrence is Dr. Mervin T. Sudler. The Dean at Kansas City is Dr. George Howard Hoxie. The total registration for 1907-8 was 101; graduates, 18. The twenty-ninth session begins Sept. 16, 1908, and ends June 9, 1909.

Topeka.

Kansas Medical College. Twelfth and Tyler Streets.—Organized in 1890. The first class graduated in 1892. It has been the Medical Department of Washburn College since 1893. It has a faculty of 25 professors and 13 lecturers and assistants, a total of 38. The course covers four years of thirty weeks each. Fees, $75 yearly. The Dean is Dr. William S. Lindsay. Total registration for 1907-8 was 69; graduates, 13. *The nineteenth session begins Sept.* 8, 1908, and ends April 28, 1909.

KENTUCKY.

Kentucky, population 2,320,298, has three medical colleges. They are all situated in Louisville, a city of 226,129 inhabitants, and are as follows: University of Louisville Medical Department. Southwestern Homeopathic Medical College and Louisville National Medical College.

Louisville.

Kentucky School of Medicine. Sixth and Center Streets.—Organized in 1817 at Lexington as the Medical Department of the Transylvania University. A class was graduated in 1818 and in each subsequent year until 1850. It was succeeded by the Kentucky School of Medicine at Louisville in 1850. The first class graduated in 1851. Total number of students registered for 1907-8 was 270; graduates, 44. It has just been merged into the University of Louisville Medical Department.

Louisville and Hospital Medical College. First and Chestnut Streets.—Organized in 1907 by the union of the Louisville Medical College, organized in 1869, with the Hospital College of Medicine, organized in 1874. Total registration for 1907-8 was 335; graduates, 102. It has just been merged into the University of Louisville Medical Department.

University of Louisville Medical Department. Eighth and Chestnut Streets.—Organized in 1837 as the Louisville Medical Institute. The first class graduated in 1838, and a class graduated in each subsequent year except 1863. In 1846 the present name was assumed. In 1907 it absorbed the Kentucky University Medical Department. It has a faculty of 28 professors and 27 lecturers and assistants, a total of 55. The course covers four years of thirty weeks each. The fees are $75 each year. The Dean is Dr. T. C. Evans. The total registration for 1907-8 was 331; graduates, 100. The next session begins Nov. 1, 1908, and ends May 31, 1909.

Southwestern Homeopathic College, Floyd and Walnut Streets.—Organized in 1892. The first class graduated in 1894. It has a faculty of 18 professors and 10 lecturers and assistants, 28 in all. The curriculum covers four years of seven months each. Total fees: First and second years, $80; third, $70, and $65 for the fourth. The Dean is Dr. Geo. S. Coon. Total number of students for 1907-8 was 13; graduates, 2. The sixteenth session begins Oct. 6, 1908, and ends May 19, 1909.

Louisville National Medical College. Colored. 112 West Green Street.—Organized in 1888. The first class graduated in 1889. The faculty numbers 22. The course covers four years of seven months each. The fees are $58, $58, $55 and $50 for the four years, respectively. The Dean is Dr. E. S Porter. Total registration for 1907-8 was 36; graduates, 6. The next session begins Oct. 6, 1908, and ends May 21, 1909.

LOUISIANA.

Louisiana, having a population of 1,539,449, contains two medical colleges: Medical Department of the Tulane University of Louisiana and Flint Medical College of New Orleans University. They are both situated in New Orleans, a city of 314,146 people.

New Orleans.

Medical Department of the Tulane University of Louisiana. University Campus and 1551 Canal Street.—Organized in 1834 as the Medical College of Louisiana. Classes were graduated in 1835 and in all subsequent years, except 1863-1865, inclusive. It was transferred to Medical Department of the University of Louisiana in 1847 and became the Medical Department of the Tulane University in 1884. The faculty numbers 69. The course covers four years of seven months each. Total fees are $135, $135, $140 and $170, respectively, for the four years. The Dean is Dr. Isadore Dyer. The total registration for 1907-8 was 535; graduates, 102. The seventy-fifth session begins Oct. 1, 1908, and ends May 19, 1909.

Flint Medical College of New Orleans University. Colored. 1566 Canal Street.—Organized in 1889 as the Medical College of New Orleans University. A class was graduated in 1892 and in each subsequent year, except 1896. Took the above name in 1901. The faculty consists of 6 professors, 9 lecturers and instructors, 15 in all. The course covers four years of thirty weeks each. Total fees, $50 each year. The Dean is Dr. A. D. Bush, 1566 Canal Street. Total registration for 1907-8 was 34; graduates, 8. The nineteenth session begins Sept. 28, 1908, and ends May 5, 1909.

MAINE.

Maine, population 714,494, has one medical college, located in Portland, population 55,167.

Portland.

Medical School of Maine. The medical department of Bowdoin College. The first two years are given at Bowdoin College, Brunswick, the last two at Portland, building located on Chadwick Street. —Organized in 1820. The first class graduated in 1820. The course covers four years of eight months each. The total fees are $120 for the first year; for the second and third, $110, and $110 for the fourth year. The Dean is Dr. Alfred Mitchell, Brunswick. Total number of students in 1907-8 was 93; graduates, 29. The eighty-ninth session begins Oct. 22, 1908, and ends June 23, 1909.

MARYLAND.

Maryland, with a population of 1,275,434, contains seven medical colleges, all located in Baltimore, a city with 553,669 inhabitants. They are as follows: School of Medicine of the University of Maryland, College of Physicians and Surgeons, Baltimore Medical College, Women's Medical College, Atlantic Medical College, Johns Hopkins Medical School and Maryland Medical College.

Baltimore.

Johns Hopkins Medical School. Washington and Monument Streets.—This is the Medical Department of Johns Hopkins University, and was organized in 1893. The first class was graduated in 1897 and a class was graduated each subsequent year. The faculty consists of 13 professors and 90 clinical professors, etc., a total 103. The requirements for admission demand that the applicant either has (a) completed the chemical-biologic course which leads to the A.B. degree in the university; (b) graduated at an approved college or scientific school and has a knowledge of French and German, physics, chemistry and biology, such as may be obtained from a year's course. The course extends over four years of eight and one-half months each. The charge for tuition is $200 per annum. The Dean is Dr. William H. Howell, 232 West Lanvale Street. Total registration for 1907-8 was 281; graduates, 68. The sixteenth session begins Oct. 6, 1908, and ends June 14, 1909.

College of Physicians and Surgeons. Calvert and Saratoga Streets.—Organized in 1872. The first class graduated in 1873. In 1878 it united with Washington University School of Medicine. The faculty numbers 55. The work covers four years of eight months each. Total fees are $155 and $185 for the respective years. The Dean is Dr. Charles F. Bevan. The total number of students registered in 1907-8 was 253; graduates, 68. The thirty-seventh session begins Oct. 1, 1908, and ends June 1, 1909.

University of Maryland School of Medicine. Lombard and Greene Streets.—Organized in 1807 as the College of Medicine of Maryland. The first class graduated in 1810. In 1812 it became the University of Maryland School of Medicine. The faculty numbers 62. The course covers four years of eight months each. The total fees for the first two years are $135 each; for the third year $125, and $155 for the final year. The Dean is Dr. R. Dorsey Coale. The total number of students registered in 1907-8 was 316; graduates, 73. The one hundred and second session begins Oct. 1, 1908, and ends June 1, 1909.

Baltimore Medical College. Madison Street and Linden Avenue.—Organized in 1881. The first class graduated in 1882. The faculty numbers 69. The course covers four years of eight months each. The Dean is Dr. David Streett. The total number of students registered in 1907-8 was 323; graduates, 82. The twenty-eighth session begins Sept. 21, 1908, and ends May 21, 1909.

Woman's Medical College of Baltimore. McCulloh and Hoffman Streets.—Organized in 1882. Classes graduated in 1883 and in each subsequent year, except 1898. The faculty numbers 34. The course covers four years of eight months each. The fees for the first three years are $106 each, and $111 for the last year. The Dean is Dr. John R. Abercrombie, 827 North Eutaw Street. The total registration for 1907-8 was 28; graduates, 11. The twenty-seventh session begins Oct. 1, 1908, and ends May 31, 1909.

Maryland Medical College. 1114 West Baltimore Street.—Organized in 1898. The first class graduated in 1899. The faculty is composed of 13 professors and 9 lecturers and assistants, a total of 22. The course covers four years of eight months each. Matriculation fee, $5; total fees first three years, $75 each; fourth year, $105. The Dean is Dr. Harry Gross. The total registration for 1907-8 was 100; graduates, 20. The next session begins Oct. 1, 1908, and ends June 1, 1909.

Atlantic Medical College. Mount Street, north of Riggs Avenue.—Organized in 1891 as the Southern Homeopathic Medical College. In 1907 it assumed the above name and became non-sectarian. The Dean is Dr. Eldridge C. Price. The total registration for 1907-8 was 39; graduates 22. The next session begins Oct. 1, 1908, and ends June 3, 1909.

MASSACHUSETTS.

Massachusetts, population 3,043,346, has four medical colleges: Medical School for Harvard University, Boston University School of Medicine, College of Physicians and Surgeons and Tufts College Medical School. They are all situated in Boston, a city of 602,278 inhabitants.

Boston.

Medical School of Harvard University. Longwood Avenue.—Organized in 1782. The first class graduated in 1788. It has a faculty of 32 professors and 134 associates, assistants, etc., a total of 166. Candidates for admission "must present a degree in arts, literature, philosophy or science from a recognized college or scientific school, with the exception of such persons as may be admitted by special vote of the faculty." Fees: Matriculation, $5; $200 each year. The Dean is Dr. William L. Richardson, 688 Boylston Street. The total registration for 1907-8 was 298; graduates, 70. The 127th session begins Oct. 1, 1908, and ends June 30, 1909.

Boston University School of Medicine. 80 East Concord Street.—Organized in 1873. In 1874 the New England Female Medical College, founded in 1848, was merged into it. The first class graduated in 1874. The faculty includes 28 professors, 33 associates, etc., a total of 61. The course covers four years of eight months each. Total fees for the first, second and third years, $127 each, and for the last year $155. The Dean is Dr. John P. Sutherland, 302 Beacon Street. Total registration for 1907-8 was 102; graduates, 19. The thirty-sixth session begins Oct. 1, 1908, and ends June 2, 1909.

Tufts College Medical School. 416 Huntington Avenue.—Organized in 1893 as the Medical Department of Tufts College. The first class graduated in 1894. It has a faculty of 34 professors and 67 assistants, lecturers, etc., a total of 101. The course covers four years of eight months each. The total fees are $150 each year. The Secretary is Dr. Frederic M. Briggs, 31 Massachusetts Avenue. Total number of students for 1907-8 was 371; graduates, 56. The fifteenth session begins Sept. 30, 1908, and ends May 26, 1909.

College of Physicians and Surgeons. 517 Shawmut Avenue.—Organized in 1880. The first class graduated in 1882. The Dean is Dr. C. H. Cobb. The total registration for 1907-8 was 162; graduates, 26.

MICHIGAN.

Michigan, population 2,584,533, has four medical colleges. Two of these, University of Michigan Department of Medicine and Surgery and the Homeopathic College of the University of Michigan, are located at Ann Arbor, a city of 14,645 people. Detroit, a city of 353,535 inhabitants, contains two medical colleges, the Detroit College of Medicine and the Detroit Homeopathic College.

Ann Arbor.

University of Michigan Department of Medicine and Surgery.—Organized in 1850. The first class graduated in 1851. It has a faculty composed of 32 professors, 33 associates, instructors, etc., a total of 65. Beginning with the session of 1909-10 the entrance requirements will be two years of college work, including a year of chemistry, physics and biology, including laboratory work, and a reading knowledge of one modern language. The curriculum embraces four years of nine months each. The total fees for Michigan students for the entire course of four years is $350 and for others about $400. The Dean is Dr. Victor C. Vaughan. The total registration for 1907-8 was 390; graduates, 72. The fifty-ninth session begins Sept. 29, 1908, and ends June 24, 1909.

University of Michigan Homeopathic College.—Organized in 1875. The first class graduated in 1877. It has a faculty of 8 professors and 4 assistants, total 12, besides a part of the teaching force from the Department of Medicine and Surgery. The total fees for Michigan students are about $240 for the four years, and for other students about $295. The Dean is Dr. W. B. Hinsdale. The total registration for 1907-8 was 82; graduates, 15. The thirty-third session begins Sept. 29, 1908, and ends June 24, 1909.

Detroit.

Detroit College of Medicine, St. Antoine, Catherine and Mullett Streets and Gratiot Avenue.—Organized in 1885 by consolidation of Detroit Medical College, organized in 1868, and the Michigan College of Medicine, organized in 1880. The first class graduated in 1886. The faculty embraces 28 professors, 80 lecturers, instructors, etc., a total of 108. The course covers four years of eight months each. Fees: Matriculation, paid once, $5; tuition, each term, $65; hospital and laboratory tickets, each $10, and diploma fee, $30. The Registrar is Dr. F. B. Walker. The total registration for 1907-8 was 146; graduates 30 The twenty-fourth session begins Sept. 16, 1908, and ends May 27, 1909.

Detroit Homeopathic College. Lafayette Avenue and Third Street.—Organized in 1899. A class was graduated in 1900 and in each subsequent year. It has a faculty of 36. The course embraces four years of eight months each. Fees: From $70 to $90 per year. The Dean is Dr. D. A. MacLachlan; Registrar, J. M. Griffin. Total registration for 1907-8 was 22; graduates, 6. The tenth session begins Sept. 15, 1908, and ends May 15, 1909.

MINNESOTA.

Minnesota, population 2,025,615, contains two medical colleges, the College of Medicine and Surgery of the University of Minnesota and the College of Homeopathic Medicine and Surgery of the University of Minnesota. They are situated in Minneapolis. Minneapolis and St. Paul are practically one city, and have a combined population of 477,640.

Minneapolis.

College of Medicine and Surgery, University of Minnesota.—Organized in 1883. Reorganized in 1888 by absorption of St. Paul Medical College and Minnesota Hospital Medical College. The first class graduated in 1889. In 1908 the Minneapolis College of Physicians and Surgeons, organized in 1883, was merged. The faculty includes 45 professors and clinical professors and 69 associate professors, assistants, etc., a total of 114. The curriculum covers four years of nine months each. The entrance requirements are two years of university work in addition to four years of high school work. Total fees for each year, $100; microscope rental, $4 to $7 per annum. The Dean is Dr. F. F. Wesbrook. The total registration for 1907-8 was 166; graduates, 32. The twenty-first session begins Sept. 15, 1908, and ends June 5, 1909.

College of Homeopathic Medicine and Surgery, University of Minnesota.—Organized in 1886 as the Minnesota Homeopathic Medical College. The first class graduated in 1887. In 1888 it became the Homeopathic Department of the University of Minnesota. The faculty comprises 26 professors and 49 assistants, 75 in all. Instruction in the primary branches is received in common with the students of the College of Medicine and Surgery. The course covers four years of nine months each. The total fees for the first two years are $100 each and $80 each for the last two years. The Dean is Dr. Eugene L. Mann. Total registration for 1907-8 was 6; graduates, 3. The next session begins Sept. 15, 1908, and ends June 5, 1909.

MISSISSIPPI.

Mississippi, population 1,708,272, has two medical colleges: the Medical Department of the University of Mississippi is located at Oxford, a city of 2,000 inhabitants, and at Vicksburg, population 15,710. The Mississippi Medical College is located at Meridian, population 20,503.

Meridian.

Mississippi Medical College. Fifth Street and Twenty-fourth Avenue.—Organized in 1906. The first class graduated in 1907. The faculty numbers 16. The Dean is Dr. T. A. Barber. The total registration for 1907-8 was 105; graduates, 11. The third session begins Oct. 1, 1908, and ends May 1, 1909.

Oxford and Vicksburg.

University of Mississippi Medical Department.—Organized in 1903. Gave only the first two years of the medical course until 1908, when a clinical department was organized at Vicksburg. The course covers four years of eight and a half months each. The work of the first two years are given at Oxford and the last two at Vicksburg. The faculty numbers 9. Dr. W. S. Leathers is the Acting Dean. The total registration for 1907-8 was 28. The sixth session begins Sept. 8, 1908, and ends June 8, 1909.

MISSOURI.

Missouri, population 3,363,153, has eleven medical colleges. St. Louis, population 649,320, contains seven of these, viz., St. Louis College of Physicians and Surgeons, American Medical College, Homeopathic Medical College of Missouri, Medical Department St. Louis University, Washington University Medical Department, Barnes Medical College and the Hippocratean College of Medicine. Kansas City, which, with Kansas City, Kan., has a total population of 260,288, has two colleges, namely: University Medical College and the Hahnemann Medical College of Kansas City. Ensworth Medical College is located in St. Joseph, population 118,004. The Department of Medicine of the University of Missouri is at Columbia, a town of 7,800 people.

Columbia.

Department of Medicine of the University of Missouri.—Organized at St. Louis in 1845; was discontinued in 1859, but was reorganized at Columbia in 1872. The faculty includes 14 professors, 14 assistant professors, lecturers, etc., a total of 28. The course covers four years of nine months each. The candidate for entrance must present, beside the diploma from a recognized four-year high school, credentials of college work as follows: English, 6 hours; German, 6 hours; general zoology, 6 hours; general physics, 6 hours; inorganic chemistry, 6 hours. There is no charge for tuition, the only expenses being a library fee of $10 each year and small laboratory fees. The Dean is Dr. A. W. McAlester. Total registration of students for 1907-8 was 65; graduates, 8. The next session begins Sept. 14, 1908, and ends June 2, 1909.

Kansas City.

University Medical College of Kansas City. 911 East Tenth Street.—Organized in 1881 as the University of Kansas City Medical Department. The first class graduated in 1882. It was reorganized in 1888 under the present title. Its faculty comprises 30 professors and 35 lecturers and assistants, a total of 65. The course of study covers four years of thirty weeks each and the work is graded. The total fees for each year are $100. The Dean is Dr. J. E. Logan, 1208 Wyandotte Street. The total registration for 1907-8 was 192; graduates, 64. The twenty-seventh session begins Sept. 9, 1908, and ends May 14, 1909.

Kansas City Hahnemann Medical College. 1020 East Tenth Street—Organized in 1888 as the Kansas City Homeopathic Medical College. The first class graduated in 1899. In 1902 it united with the Hahnemann Medical College of the Kansas City University, taking the present title. It has a faculty of 43. The course covers four years of seven months each. The Dean is Dr. Frank Elliott, 1023 Grand Avenue. Total registration for 1907-8 was 62; graduates, 15. The next session begins Sept. 8, 1908, and ends May 8, 1909.

St. Joseph.

The Ensworth Medical College. Seventh and Jule Streets.—Organized in 1876 as the St. Joseph Hospital Medical College. In 1882 it merged with the College of Physicians and Surgeons to form the St. Joseph Medical College. In 1888 changed name to Ensworth Medical College. In 1905 merged with the Central Medical College, organized in 1894, to form the Ensworth-Central Medical College. In 1907 the present title was resumed. The faculty numbers 34. The course covers four years of eight months each. The fees are $75 for each of the first three years; the fourth year, $95. The Secretary is Dr. T. E. Potter. Total registration for 1907-8 was 91; graduates, 25. The next session begins Sept. 7, 1908, and ends May 1, 1909.

St. Louis.

Washington University Medical Department. 1806 Locust Street.—Organized in 1842 as the Medical Department of St. Louis University. In 1855 it was chartered as an independent institution under the name of St. Louis Medical College. The first class graduated in 1843. In 1891 it became the Medical Department of Washington University. In 1899 it absorbed the Missouri Medical College. The faculty comprises 45 professors, 45 lecturers and instructors, a total of 90. The course is four years of eight months each. The total fees are: For the first year, $132.75; second, $133.75; third, $115.25, and for the fourth, $101.25. The Dean is William H. Warren, Ph.D. The total registration for 1907-8 was 208; graduates, 59. The next session begins Sept. 28, 1908, and ends May 26, 1909.

St. Louis University School of Medicine. Grand Avenue and Caroline Street.—Organized in 1901 by union of Marion-Sims Medical College, organized in 1890, and Beaumont Hospital Medical College, organized in 1886. It became the Medical Department of St. Louis University in 1903. The faculty is composed of 38 professors, 67 lecturers and assistants, a total of 105. The curriculum covers four years of seven months each. The total fees for the first year are $100; for the second, third and fourth, $95 each. The Dean is Dr. E. P. Lyon. The total registration for 1907-8 was 241; graduates, 68. The next session begins Oct. 1, 1908, and ends May 22, 1909.

St. Louis College of Physicians and Surgeons. Jefferson Avenue and Gamble Street.—Organized in 1869. Classes graduated in 1870 and in each subsequent year until 1873, when it suspended. It was reorganized in 1879. Classes graduated in 1880 and subsequent years. It has a faculty of 25 professors, 19 lecturers, instructors, etc., a total of 44. The course covers four years of seven months each. Total fees for the first year are $80; second and third, $75 each, and $85 for the fourth year. The Dean is Dr. Waldo Briggs, 2600 Gamble Street. Total registration for 1907-8 was 164; graduates, 49.

Barnes Medical College. Garrison and Lawton Avenues.—Organized in 1892. Classes graduated in 1893 and in all subsequent years, except 1899. It has a faculty of 39 professors and 30 lecturers and assistants, a total of 69. The course of study covers four years of eight months each. The total fees are $100 each year. The Secretary is Dr. C. M. Ament, 1025 Missouri Trust Building. Total registration for 1907-8 was 323; graduates, 78. The seventeenth session begins Sept. 9, 1908, and ends May 9, 1909. *The Missouri State Board of Health reports that this college is not now in good standing.*

Homeopathic Medical College of Missouri. Jefferson Avenue and Howard Street.—Organized in 1859. Classes graduated in 1860 and in all subsequent years, except 1862 to 1864, inclusive.

It has a faculty of 18 professors and 9 assistants, total 27. The curriculum covers four years of seven months each. Fees: First year, $80; second, $75; third, $60, and $75 for the fourth year. The Dean is Dr. L. C. McElwee, 1221 North Grand Avenue. Total registration for 1907-8 was 27; graduates, 9. The next session begins Sept. 8, 1908, and ends April 23, 1909.

American Medical College. Eclectic. 407 South Jefferson Avenue.—Organized in 1873. Two classes graduated each year from 1874 to 1883, inclusive. Since then one class has graduated each year. The Dean is Dr. P. C. Clayberg. The total registration for 1907-8 was 41; graduates, 8.

Hippocratean College of Medicine. 3412 Morgan Street.—Organized in 1907 as a night school. During 1907-8 it had 34 students. The Dean is Dr. Emory Lanphear. *The Missouri State Board of Health reports that this college is not in good standing.*

NEBRASKA.

Nebraska, population 1,068,484, has four medical colleges: The University of Nebraska College of Medicine and John A. Creighton Medical College at Omaha, population 124,167, and Lincoln Medical College, and the Nebraska College of Medicine at Lincoln, population 48,232.

Lincoln and Omaha.

College of Medicine, University of Nebraska. Eleventh and R Streets, Lincoln, and Twelfth and Pacific Streets, Omaha.—Organized in 1881 as the Omaha Medical College. The first class graduated in 1882. It became the Medical Department of Omaha University in 1891. In 1902 it affiliated with the University of Nebraska, with the present title. The first two years are given at Lincoln; the last two at Omaha. The faculty is composed of 37 professors and 45 lecturers and instructors, total 82. For admission one full year of college work above the high school course required The fees are approximately $100 per annum The Dean is Henry B Ward, Ph D., University of Nebraska, Lincoln. The total registration for 1907-8 was 98; graduates, 24. The next session begins Sept. 16, 1908, and ends May 20, 1909.

Lincoln.

Lincoln Medical College. Eclectic. 121 South Fourteenth Street. It is the Medical Department of Cotner University.—Organized in 1890. The first class graduated in 1891. The faculty numbers 38. The course of study covers four years of thirty weeks each The total fees for the first year are $80; second and third, $75 each, and $85 for the fourth year, or $250 for all four years together. The Secretary is Dr. R. H. Spradling, 1315 O Street. The total registration for 1907-8 was 50; graduates, 18. The nineteenth session begins Sept. 7, 1908, and ends June 7, 1909.

Nebraska College of Medicine. 1735 O Street. Affiliated with the Nebraska Wesleyan University.—Organized in 1905. The first class graduated in 1907. The Dean is Dr. James F. Stevens. The total registration for 1907-8 was 34; graduates, 2. The next session begins Sept. 14, 1908, and ends June 9, 1909.

Omaha.

John A. Creighton Medical College. Fourteenth and Davenport Streets. It is the Medical Department of Creighton University. —Organized in 1892. The first class graduated in 1895 It has a faculty of 36 professors and 16 associates, lecturers and assistants, a total of 52. Beginning in 1910, two years of work in a college of liberal arts will be required for admission. The course of study embraces four years of eight months each. The total fees for the first two years are $90 each, and $85 for each of the last two years The Dean is Dr. D. C. Bryant, McCague Building. Total number of students registered in 1907-8 was 158; graduates, 41. The seventeenth session begins Sept. 1, 1908, and ends May 1, 1909.

NEW HAMPSHIRE.

New Hampshire, population 432,624, has one medical college, located at Hanover, population 1,797.

Hanover.

Dartmouth Medical School.—Organized as New Hampshire Medical Institute in 1797. The first class graduated in 1798. It is the Medical Department of Dartmouth College. The faculty is made up of 18 professors and 4 instructors, a total of 22. The course covers four years of seven and a half months each. The fees are $100 each year. The Dean is Dr. William T. Smith. The total registration for 1907-8 was 58; graduates, 9. The work of the first and second years begins with that of the academic department Sept. 24, 1908, and ends June 30, 1909; for the advanced classes the course begins Aug. 4, 1908, and ends March 26, 1909.

NEW YORK.

New York State, population 8,226,990, has eleven medical colleges. Eight of these, College of Physicians and Surgeons (Columbia University), Long Island College Hospital, New York Homeopathic Medical College and Hospital, New York Medical College and Hospital for Women, Eclectic Medical College of the City of New York, Cornell University Medical College, the University and Bellevue Hospital Medical College, and Fordham University School of Medicine, are located in New York City, population 4,113,043. Albany Medical College is located in Albany, a city of 98,537 people. The University of Buffalo Medical Department is situated in Buffalo, population of 381,819. The College of Medicine, Syracuse University, is in Syracuse, a city of 118,880 inhabitants.

Albany.

Albany Medical College. Lancaster and Jay Streets.—Organized in 1838. The first class graduated in 1839. It became the Medical Department of Union University in 1873. The faculty is composed of 17 professors and 46 lecturers, assistants, etc., a total of 63. The curriculum covers four years of seven and one-half months each. Fees: First year, $130; second year, $145; third year, $120, and fourth year, $130. The Registrar is Dr. Willis G. Tucker. The total registration for 1907-8 was 180; graduates, 40. The seventy-first session begins Sept. 23, 1908, and ends May 18, 1909.

Buffalo.

University of Buffalo Medical Department. High Street, near Main.—Organized in 1846. The first class graduated in 1847. It absorbed the Medical Department of Niagara University in 1898. The faculty is composed of 39 professors and 50 lecturers, assistants, etc., a total of 89. The course covers four years of eight months each. The tuition is $125 each year; this does not include laboratory fees. The Dean is Dr. Matthew D. Mann, 37 Allen Street. Total registration for 1907-8 was 176; graduates, 37. The sixty-third session begins Sept. 28, 1908, and ends May 28, 1909.

New York.

College of Physicians and Surgeons in the City of New York. 437 West Fifty-ninth Street.—Organized in 1807 by the regents of the University of the State of New York as their medical department. The first class graduated in 1811. Affiliated with Columbia College in 1814 and was permanently connected in 1860, when it became the Medical Department of Columbia College. That institution became Columbia University in 1891. The faculty is composed of 48 professors and 115 instructors, demonstrators, etc., a total of 163. The work covers four years of eight months each The Dean is Dr. Samuel W. Lambert. The total fees for the first year are $225; for the second and third, $250, and $275 for the fourth year. Total registration for 1907-8 was 322; graduates, 81. The one hundred and second session begins Sept. 23, 1908, and ends June 6, 1909.

Cornell University Medical College. Ithaca, and First Avenue and Twenty-eighth Street, New York.—Organized in 1898. The first class was graduated in 1889. The work of the first two years may be taken either in Ithaca or New York. The faculty is composed of 48 professors and 133 assistants, lecturers, instructors, etc., a total of 181. In and after 1909 all candidates for admission must have at least such knowledge of physics and inorganic chemistry as may be obtained in college by a year's course in these subjects when accompanied by laboratory work; and in and after 1910 all candidates for admission must also possess a similar knowledge of biology. Fees: First year, $190; second and third, $185 each, and $200 for the fourth year. The Dean is Dr. William M. Polk. Total registration for 1907-8 was 316; graduates, 58. The eleventh session begins Sept. 30, 1908, and ends June 9, 1909.

Eclectic Medical College of the City of New York. 239 East Fourteenth Street.—Organized in 1865. The first class graduated in 1867. It has a faculty of 18 professors and 21 lecturers, demonstrators, etc., 39 in all. The work covers four years of seven months each The total fees: For each of the first three years, $125, and $155 for the fourth year. The Dean is Dr. George W. Boskowitz. Total registration for 1907-8 was 56; graduates, 7. The forty-fourth session begins Sept. 15, 1908, and ends May 15, 1909.

Fordham University School of Medicine. Third and Pelham Avenues.—Organized in 1905. The faculty consists of 32 professors and 33 lecturers and assistants, a total of 65. The course of instruction covers four years of nine months each. Fees: First year, $190; second and third years, $185 each. The Dean is Dr. James J. Walsh. The total registration for 1907-8 was 30. No class has yet been graduated. The fourth session begins Sept. 24, 1908, and ends May 20, 1909.

Long Island College Hospital. Henry Street, near Atlantic Avenue, Brooklyn.—Organized in 1858. The first class graduated in 1860. It has a faculty of 9 professors and 90 assistants, instructors, etc., a total of 99. The course covers four years of thirty weeks each. Fees: First year, $195; second, $200; third $160, and $195 for the fourth year. The Secretary is Dr. Joseph H. Raymond. Total registration, 1907-8, was 337; graduates, 89. The fifty-first session begins Sept. 28, 1908, and ends May 14, 1909.

New York Homeopathic Medical College and Hospital. Eastern Boulevard, between Sixty-third and Sixty-fourth Streets.—Organized in 1858. Incorporated in 1860 as the Homeopathic Medical College for the State of New York. The present title was assumed in 1869. The first class graduated in 1861. It has a faculty of 30 professors and 44 lecturers, instructors, etc., 74 in all. The course covers four years of seven months each. Total fees for the first year, $130; second, $130; third, $125, and $155 for the fourth year. The Secretary is Dr. John W. Dowling, 56 West Fiftieth Street. Total registration for 1907-8 was 80; graduates, 18. The fifty-first session begins Oct. 6, 1908, and ends May 6, 1909.

New York Medical College and Hospital for Women. 17-19 West One Hundred and First Street.—Organized in 1863. The first class graduated in 1864. The Dean is Dr. Helen Cooley Palmer. The total registration for 1907-8 was 20; graduates, 3.

University and Bellevue Hospital Medical College. First Avenue and Twenty-sixth Street.—Organized in 1898 by the union of the New York University Medical College, organized in 1841, and the Bellevue Hospital Medical College, organized in 1861. It is the Medical Department of New York University. The faculty is composed of 33 professors and 72 instructors, etc., in all 105. The course covers four years of eighth months each. Fees: First year, $185; second and third, $180 each, and $195 for the fourth year. The Dean is Dr. Egbert Le Fevre. Total registration for 1907-8 was 503; graduates, 88. The eleventh session begins Sept. 30, 1908, and ends June 2, 1909.

Syracuse.

Syracuse University College of Medicine. 619 West Genesee Street.—Organized in 1872 as the College of Physicians and Surgeons of Syracuse University. The present title was assumed in 1875. In 1872 Geneva Medical College was merged with it. The first class was graduated in 1873. The faculty is composed of 14 professors and 37 lecturers, instructors, etc., in all 51. The course covers four years of eight months each. The average total fees for each year are $167.25. The Dean is Dr. John L. Heffron. The total registration for 1907-8 was 150; graduates, 43. The thirty-seventh session begins Oct. 6, 1908, and ends June 10, 1909.

NORTH CAROLINA.

North Carolina, population, 2,059,326, has four medical schools, one of which gives only the first two years of the medical course. The Medical Department of the University of North Carolina is located at Chapel Hill, population 1,100, and at Raleigh, population 14,225. The Leonard School of Medicine is at Raleigh. The North Carolina Medical College is at Charlotte, population 22,009. Wake Forest School of Medicine is at Wake Forest, population 823.

Chapel Hill and Raleigh.

University of North Carolina Medical Department.—Organized in 1890. Until 1902 this school gave only the work of the first two years, when the course was extended to four years by the establishment of a department at Raleigh. The first class graduated in 1903. The faculty is composed of 21 professors and 23 lecturers, assistants, etc., a total of 44. It is a member of the Association of American Medical Colleges. Total fees are $85 per year. Board, room, light and heat may be had for from $84 to $102 per college year. The Dean of the Department at Chapel Hill is Dr G. H. Manning; of the Department at Raleigh, Dr. H. A. Royster. The total registration for 1907-8 was 114; graduates, 12. The nineteenth session begins Sept. 7, 1908, and ends May 29, 1909.

Charlotte.

North Carolina Medical College. Church and Sixth Streets.—Organized in 1887 at Davidson as the Davidson School of Medicine. It was a preparatory school only, not granting any degrees until 1893, when it was chartered under its present name. The first class was graduated in 1893. Removed to Charlotte in 1907. The faculty numbers 24. The course covers four years of eight months each. Fees: First three years, $85 each, and $100 for the fourth year. The Dean is Dr. Walter O. Nisbet. The total registration for 1907-8 was 82; graduates, 6. The next session begins Sept. 8, 1908, and ends April 20, 1909.

Raleigh.

Leonard School of Medicine.—Colored. This department of Shaw University was established in 1882. Classes were graduated in 1886, 1888 and in all subsequent years. It has a faculty of 10. The course covers four years of seven months each. The total fees for each year are $75. The dormitory plan is adopted generally, and board and room cost $2 a week. The Dean is Dr. James McKee. Total registration for 1907-8 was 146; graduates, 43. The 27th session begins Oct. 1, 1908, and ends May 13, 1909.

Wake Forest.

Wake Forest College School of Medicine.—This school was organized in 1902. The faculty numbers 10. It only gives the first two years of the medical course, which constitute a part of the course for the B.S. degree. Each annual course extends over nine months. The fees are $100 each year. The Dean is Dr. Watson S. Rankin. The total registration for 1907-8 was 40. The seventh session begins Sept. 1, 1908, and ends May 25, 1909.

NORTH DAKOTA.

North Dakota, population 383,226, has one medical college, the College of Medicine of the State University of North Dakota, which is situated at University near Grand Forks.

University.

University of North Dakota College of Medicine.—Organized in 1905. The faculty is composed of 5 professors and 13 instructors, a total of 18. The course consists of two years' academic work and two years of medical college subjects, occupying nine months each year. The total fees for each of the medical subject years are $50. The Dean is M. A. Brannon, A. M. The total registration for 1907-8 was 20. The fourth session begins Sept. 22, 1908, and ends June 17, 1909.

OHIO.

Ohio, population 4,448,677, has eight medical colleges. Three of these, the Medical Department University of Cincinnati, Eclectic Medical Institute, and Pulte Medical College, are located in Cincinnati, a city of 345,230 inhabitants. Cleveland, population 460,327, contains three medical schools: Western Reserve University Medical College, Cleveland College of Physicians and Surgeons and the Cleveland Homeopathic Medical College. Columbus, population 145,414, contains one medical college, the Starling-Ohio Medical College. Toledo, with 159,980 people, has one medical school, the Toledo Medical College.

Cincinnati.

Medical College of Ohio.—This is the Medical Department of the University of Cincinnati, and was organized in 1819. It has a faculty of 28 professors and 33 lecturers and assistants, a total of 61. The course covers four years of eight months each. The lecture fees are $125 each year; a matriculation fee of $5, payable but once, and a graduation fee of $25. Total registration of students for 1907-8 was 117; graduates, 26. The Secretary is Dr. Albert V. Phelps. The next session begins Oct. 1, 1908, and ends June 5, 1909.

Miami Medical College.—This school was organized in 1852 and has a faculty of 24 professors and 26 lecturers and demonstrators, a total of 50. The curriculum embraces four years of eight months each. The total fees are, for the first year, $130; for the second and third, $125, and $150 for the fourth year. The Dean is Dr. J. C. Oliver, 628 Elm St. The total registration for 1907-8 was 70; graduates, 16. The next session opens Oct. 1, 1908, and closes June 5, 1909.

Note.—The two above colleges have just merged, the new college thus formed to be the Medical Department of the University of Cincinnati. Both colleges will run as co-ordinate schools during 1908-9. The new college will begin operation in the fall of 1909,

Eclectic Medical Institute. 1009 Plum Street.—Organized in 1832 at Worthington as the Worthington Medical College. Removed to Cincinnati in 1843. In 1845 it was chartered under its present title. In 1857 the American Medical College, organized in 1839, was merged into it, and in 1859 the Eclectic College of Medicine and Surgery, organized in 1856, merged into it. Classes were graduated in 1833 and in all subsequent years except 1839 to 1843 inclusive. It has a faculty of 15 professors and 10 lecturers and assistants, a total of 25. The course covers four years of thirty-two weeks each. The fees are $90 for each year. The Dean is Dr. Rolla L. Thomas, 792 East McMillan Street. Total registration for 1907-8 was 91; graduates 23. The next session begins Sept. 14, 1908, and ends April 28, 1909.

Pulte Medical College. Homeopathic. Mound and Seventh streets.—Organized in 1872. The first class graduated in 1873. The faculty numbers 32. The curriculum covers four years of seven months each. Fees: First year, $80; for the second and third, $75 each, and $100 for the fourth. The Dean is Dr. Charles E. Walton. Total enrolment for 1907-8 was 15; graduates, 1. The 37th session begins Sept. 30, 1908, and ends May 25, 1909.

Cleveland.

The Cleveland College of Physicians and Surgeons. Central
Avenue and East Fourteenth Street.– Charity
Hospital Medical College, became mnt of
Wooster University in 1869 and th of the
Ohio Wesleyan University in 1896, wh nt title.
Classes were graduated in 1865 and in all subsequent years except 1881. The faculty is composed of 32 professors, 28 lecturers, assistants, instructors, etc., 60 in all. The total annual fees are $130. The curriculum covers four years of eight months each. The Dean is Dr. R. E. Skeel, 314 The Osborn. Total registration for 1907-8 was 90; graduates, 20. The next session begins Oct. 1, 1908, and ends May 20, 1909.

Cleveland Homeopathic Medical College. Prospect Avenue and Huron Road.—Organized in 1849 as the Western College of Homeopathic Medicine. The first class graduated in 1853. In 1857 it became the Western Homeopathic College and in 1870 it became the Homeopathic Hospital College when the Homeopathic Medical College for Women, organized in 1868, merged into it. In 1894 it became the Cleveland University of Medicine and Surgery, which in 1898 merged with the Cleveland Medical College, organized in 1890, taking the present title. The faculty includes 32 professors and 25 adjuncts, lecturers, etc., 57 in all. The course embraces four years of thirty weeks each. Fees, $125 per year. The Dean is Dr. George H. Quay. Total number of students registered 1907-8 was 43; graduates, 10. The next session begins Sept. 23, 1908, and ends May 14, 1909.

Western Reserve University, Medical Department. St. Clair Avenue and E. Ninth Street.—Organized in 1843 as the Cleveland Medical College. Classes were graduated in 1845 and in all subsequent years excepting 1862 and 1863. It assumed the present title in 1881. The faculty includes 24 professors and 70 lecturers, assistants, etc., a total of 94. The curriculum embraces four years of eight and one-half months each. Three years of college work are required for admission to first year of medical course. The total fees are $125 for each year. The Dean is Dr. B. L. Millikin, 1110 Euclid Avenue. The total registration for 1907-8 was 104; graduates, 30. The 66th session begins Oct. 1, 1908, and ends June 17, 1909.

Columbus.

Starling-Ohio Medical College. Buttles Avenue and Park Street. Organized in 1907 by the union of Starling Medical College (organized 1834) with the Ohio Medical University (organized 1890). The faculty consists of 32 professors and 39 lecturers, demonstrators, etc., a total of 71. The course covers four years of eight months each. Fees, $100 per year; matriculation fee, $5; graduation fee $10. The Dean is Dr. George M. Waters. The total registration for 1907-8 was 209; graduates, 30. The next session begins Sept. 23, 1908, and ends May 18, 1909.

Toledo.

Toledo Medical College. Cherry and Page Streets.—Organized in 1883. The first class graduated in 1883. The curriculum embraces four years of eight months each. The fees are $75 for each year, with a matriculation fee of $5, payable once. The Dean is Dr. James Donnelly. The total registration for 1907-8 was 29; graduates, 3. The next session begins Oct. 1, 1908, and ends June 1, 1909.

OKLAHOMA.

Oklahoma, population 1,109,435, has two medical schools, the School of Medicine of the University of Oklahoma, which is located at Norman, a city of 3,040 inhabitants, and the College of Medicine of Epworth University, located at Oklahoma City, which has a population of 20,990.

Norman.

School of Medicine, University of Oklahoma.—Organized in 1903. Gives only the first two years of the medical course and does not grant degrees. The session extends over a period of nine months. The faculty numbers 12. Two courses are offered, one covering two years, at the completion of which a certificate is given; the other a combined course of four years, leading to the degree of B.S. Students are encouraged to take the latter course. The Acting Dean is Dr. C. S. Bobo. The total registration for 1907-8 was 8. The sixth session begins Sept. 15, 1908, and ends June 10, 1909.

Oklahoma City.

College of Medicine of Epworth University.—Organized in 1904. The first class graduated in 1907. The faculty numbers 39. The course of study covers four years of seven and a half months each. The total fees are $100 each year. The Dean is Dr. A. K. West. The registration for 1907-8 was 21; graduates, 2. The fifth session begins Oct. 2, 1908, and ends May 10, 1909.

OREGON.

Oregon, population 474,738, has two medical colleges: The Medical Department of Willamette University, located in Salem, a city of 7,287 people, and the University of Oregon Medical Department, in Portland, a city of 109,884 population.

Portland.

University of Oregon, Medical Department. Lovejoy and Twenty-third Streets.—Organized in 1887. The first class graduated in 1888. It has a faculty of 14 professors and 25 lecturers, assistants, etc., a total of 39. The course is four years of seven and one-half months each. Fees: First year, $142.50; second, $137.50; third, $107.50, and for the fourth, $57.50. The Dean is Dr. Simeon E. Joseph. The total registration for 1907-8 was 88; graduates, 20. The 22d session begins Sept. 14, 1908, and ends May 2, 1909.

Salem.

Medical Department Willamette University.—Organized in 1865 at Salem.' Classes were graduated in 1867 and in all subsequent years except 1896. It moved to Portland in 1878, but returned to Salem in 1895. The Dean is Dr. W. H. Byrd. The total registration for 1907-8 was 35; graduates, 10. The next session begins Oct. 5, 1908, and ends May 15, 1909

PENNSYLVANIA.

Pennsylvania, population 6,928,515, has seven medical colleges. Of these Philadelphia, having a population of 1,441,735, contains six, as follows: University of Pennsylvania, Department of Medicine, Jefferson Medical College, Hahnemann Medical College, Woman's Medical College of Pennsylvania, Medico-Chirurgical College of Philadelphia and Temple College Department of Medicine. The other school, the Western Pennsylvania Medical College, is situated in Pittsburg, a city of 375,082 people.

Philadelphia.

University of Pennsylvania, Department of Medicine. Thirty-sixth Street and Hamilton Walk.—Organized in 1765. Classes were graduated in 1768 and in all subsequent years except 1772-79 inclusive. The original title was the Department of Medicine, College of Philadelphia, which was changed to the present title in 1791. It granted the first medical diploma issued in America. The faculty is made up of 27 professors, 2 associate professors, 4 adjunct professors, 7 assistant professors, 112 demonstrators, lecturers, associates, instructors, etc., a total of 152. The requirements for admission will be increased, beginning with the session of 1908-9, to the equivalent of one year's work in a college of arts. The course embraces study of four years of nine months each. The total fees for each year are $200, with a matriculation fee of $5 for the first year. The Dean is Dr. Charles H. Frazier. Total registration for 1907-8 was 604; graduates, 142. The next session begins Sept. 25, 1908, and ends June 16, 1909.

Jefferson Medical College. Tenth and Walnut streets.—Organized 1825 as the Medical Department of Jefferson College, Cannonsburg. The first class graduated in 1826. The present title was assumed in 1838. It has a faculty of 29 professors and 106 lecturers, demonstrators, etc., a total of 135. The course of study covers graded work of four years of eight months each. An optional fifth year is offered. The tuition is $180 a year, with a matriculation fee of $5, paid but once. The Dean is Dr. James W. Holland. The total registration for 1907-8 was 693; graduates, 126. The 84th session begins Sept. 24, 1908, and ends June 8, 1909.

Medico-Chirurgical College of Philadelphia. Cherry Street between Seventeenth and Eighteenth Streets.—Organized in 1881. The first class graduated in 1882. The faculty is composed of 31 professors and 64 lecturers, assistants, etc., a total of 95. The work embraces four years of eight months each. An optional preliminary year devoted to physics, chemistry and biology is offered. Fees, $150 per year; matriculation, $5, payable once. The Dean is Dr. Seneca Egbert. The total registration for 1907-8 was 419; graduates, 66. The 28th session begins Sept. 23, 1908, and ends June 5, 1909.

Woman's Medical College of Pennsylvania. Twenty-first and N. College Ave.—Organized in 1850. Classes were graduated in 1851 and in all subsequent years except 1861 and 1862. It has a faculty of 10 professors and 40 assistants, lecturers, etc., in all 50. The curriculum covers four years of eight months each. Fees: $140 each year. The Dean is Dr. Clara Marshall. The total registration for 1907-8 was 138; graduates, 32. The 59th session begins Sept. 23, 1908, and ends May 26, 1909.

Hahnemann Medical College and Hospital.—Organized in 1848 as the Homeopathic Medical College of Pennsylvania. In 1869 it united with the Hahnemann Medical College of Philadelphia, taking the present title. The first class graduated in 1849. It has a faculty of 28 professors and 45 lecturers, instructors, etc., in all 73. The work covers four years of eight months each. Fees: For each year, $150; matriculation, $5. The Dean is Dr. Herbert L. Northrop. The total registration for 1907-8 was 168; graduates, 37. The sixty-first session begins Sept. 21, 1908, and ends June 2, 1909.

The Temple College, Department of Medicine. Eighteenth and Buttonwood Streets.—Organized in 1901. The first class graduated in 1904. The faculty numbers 64. It gives a four-year day course and a five-year evening and day course. Three years of evening work will be required to cover the work of the two first years of the day course. All junior and senior work must be done in day classes. The fees are $150 per year. The Dean is Dr. I. Newton Snively. The total registration for 1907-8 was 134; graduates, 8. The eighth session begins Sept. 14, 1908, and ends June 15, 1909.

Pittsburg.

Western Pennsylvania Medical College. Brereton Avenue and Thirtieth Street.—Organized in 1886. The first class graduated in 1887. The faculty is composed of 40 professors and 80 associates, assistants, etc., 120 in all. The course of study embraces four years of nine months each. The total fees are $150 for each year. The Dean is Dr. J. C. Lange. The total registration for 1907-8 was 362; graduates, 57. The Twenty-fifth session begins Oct. 1, 1908, and ends June 15, 1909.

PHILIPPINE ISLANDS.

Manila.

University of St. Thomas, Medical Department.—The University was founded by a papal decree in 1587, and the medical school was added in 1771. The faculty consists of 19 professors. The course extends over a period of six years of nine months each. The first year is a preparatory one, devoted to the teaching of physics, chemistry and biology. The degree of licenciado is conferred at the conclusion of the fifth year, and the degree of doctorado at the end of the sixth year, during which only special work is done. This last year is optional, the degree of licenciado entitling the holder to all the rights and privileges of the medical practitioner. The degree is equivalent to the English M.B. The Rector of the university is Dr. Fr. Raymundo Velasquez; the Secretary of the Medical Department is Lic. Blas C. Alcuaz.

Philippine Medical College.—Organized in 1907 under the support of the Philippine Commission. The requirements for admission conform to the standards in the United States and Great Britain. The Secretary is Dr. Harry T. Marshall.

SOUTH CAROLINA.

South Carolina, population 1,453,318, has one medical college, situated in Charleston, a city of 56,317 people.

Charleston.

The Medical College of the State of South Carolina.—Founded in 1823 as the Medical College of South Carolina. In 1832 it was chartered with the present title. Classes were graduated in 1825 and in all subsequent years except 1861 to 1865 inclusive. It has a faculty of 10 professors and 18 lecturers, instructors, etc., a total of 28. The course covers four years of seven months each. The total fees for each of the first two years are $100, and $75 each for the last two. The Dean is Dr. Allard Memminger. Total enrolment for 1907-8 was 153; graduates, 17. The eighty-sixth session begins Oct. 1, 1908, and ends April 10, 1909.

SOUTH DAKOTA.

South Dakota, population 465,908, has one medical college, the University of South Dakota, College of Medicine, located at Vermilion, a city of 2,183 people.

Vermilion.

University of South Dakota, College of Medicine.—Organized in 1907. Offers only the first two years of the medical course. Two years of work in a college of liberal arts is required for admission. The faculty numbers 7. The Dean is Christian P. Lommen, B. S. The total registration for 1907-8 was 3. The second session begins Sept. 14, 1908, and ends June 10, 1909.

TENNESSEE.

Tennessee, population 2,172,476, has eleven medical colleges. Of these Vanderbilt University Medical Department, the Medical Department of the University of Nashville, University of Tennessee Medical Department and Meharry Medical College are situated in Nashville, a city with a population of 84,703. Knoxville, population 36,051, contains two colleges, Tennessee Medical College and Knoxville Medical College. Chattanooga Medical College is situated in Chattanooga, a city of 34,297 people. Memphis Hospital Medical College, the College of Physicians and Surgeons and the University of West Tennessee are located in Memphis, population 125,235. The other school, the Medical Department of the University of the South, is located at Sewanee, a town of 500 people.

Chattanooga.

Chattanooga Medical College.—McCallie and Baldwin Streets. Organized in 1889. The first class graduated in 1890. It is the Medical Department of Grant University. The faculty consists of 11 professors and 12 instructors, demonstrators, etc., total 23. The course covers four years of seven months each. The total fees approximate $55 each session. The Dean is Dr. J. R. Rathmell. The total registration for 1907-8 was 262; graduates, 25. The twentieth session begins Sept. 23, 1908, and ends April 26, 1909.

Knoxville.

Tennessee Medical College. Cleveland Street and Dameron Avenue.—Organized in 1889. The first class graduated in 1890. It has a faculty of 18 professors and 6 assistants, a total of 24. The curriculum covers four years of seven months each. Fees: First and second years, $50; third and fourth years, $60; matriculation fee, $5; graduation fee, $25. The Registrar is Dr. E R. Zamp. The total registration for 1907-8 was 83; graduates, 17. The twentieth session begins Oct. 1, 1908, and ends May 1, 1909.

Knoxville Medical College. Colored. Clinton and McGhee Streets. Organized in 1900. Classes were graduated in 1900 and in all subsequent years except 1906 and 1907. The Secretary is Dr. H. M. Green, Famous Building. There were 23 students and 4 graduates for the session of 1907-8.

Memphis.

College of Physicians and Surgeons. Opposite City Hospital. Organized in 1906. The first class graduated in 1907. It has a faculty of 52. The Memphis City Hospital furnishes clinical material. Access will also be had to St. Joseph's, Presbyterian and Lucy Brinkley hospitals. The course covers four years of seven months each. The Dean is Dr. Heber Jones. The total registration for 1907-8 was 69; graduates, 15. The third session begins Oct. 1, 1908, and ends May 1, 1909.

Memphis Hospital Medical College. Marshall Avenue and Myrtle Street.—Organized in 1880. The first class graduated in 1881. It has a faculty of 11 professors and 21 lecturers, instructors, etc., a total of 32. The course covers four years of seven months each. The total fees for the first three years are $75; for the fourth $100. The Dean is Dr. W. B. Rogers Total registration for 1907-8 was 386; graduates, 83. The twenty-ninth annual session will begin Oct. 1, 1908, and close April 30, 1909.

Medical Department of the University of West Tennessee Colored. Orleans Street.—Organized in 1900. It has a faculty of 20. The course is four years of seven months each. The fees are $40 per year; graduation, $10 extra. The Dean is Dr. M. V. Lynk. Registration for 1907-8 was 35; graduates, 9. The next session begins Sept. 14, 1908, and ends April 14, 1909.

Nashville.

Vanderbilt University, Medical Department. Elm Street and Fifth Avenue.—This school was founded in 1874. The first class graduated in 1875. The present faculty of 39 consists of 19 professors and 20 lecturers. The course covers four years of seven and a half months each. The total fees are $125 each year. The Dean is Dr. William L. Dudley. The total registration for 1907-8 was 207; graduates, 40. The thirty-fifth session begins Sept. 16, 1908, and ends May 1, 1909.

University of Nashville, Medical Department. Second Avenue and Elm Street.—Organized in 1850. The first class graduated in 1852. It has a faculty of 10 professors and 20 lecturers, assistants, etc., in all 30. The course of study covers four years of seven and a half months each. The tuition for each of the four years is $75. The Dean is Dr. William G. Ewing. The total registration for 1907-8 was 302; graduates, 67. The fifty-ninth session begins Sept. 15, 1908, and ends April 30, 1909.

University of Tennessee, Department of Medicine.—Organized in 1876 as the Nashville Medical College. In 1880 it became known by its present title. The first class graduated in 1877. The faculty is composed of 12 professors and 14 lecturers, assistants, etc., 26 in all. The course covers four years of seven and a half months each. The total fees for each of the first three years are $100 and $125 for the fourth year. The Dean is Dr. Hilliard Wood. The total registration for 1907-8 was 137; graduates, 40. The thirty-second session begins Sept. 15, 1908, and ends May 1, 1909.

Meharry Medical College. Colored. Maple and Chestnut Streets.—This school was organized in 1876 and is the Medical Department of Walden University. The faculty is made up of 12 professors and 12 instructors, demonstrators, etc., 24 in all. The work embraces four years of seven months each. The total fees are for the first year, $52; second and third years, $55 each, and $60 for the fourth year. The Dean is Dr. G. W. Hubbard. Total registration for 1907-8 was 285; graduates, 78. The thirty-third session begins Sept. 9, 1908, and ends April 6, 1909.

Sewanee.

Medical Department of the University of the South.—This school was organized in 1892 and has a faculty of 21 members. The curriculum covers four years of seven months each. The Dean is Dr. J. S. Cain. Total registration for 1907 was 99; graduates, 31. The seventeenth session begins April 1, 1909, and ends Oct. 31, 1909.

TEXAS.

Texas, population 3,536,618, has five medical colleges. The University of Texas Department of Medicine is located at Galveston, a city of 34,355 inhabitants. The Medical Department of Fort Worth University is at Fort Worth, population 27,096. The Baylor University College of Medicine, the Medical Department of Southwestern University and the College of Physicians are situated in Dallas, population 52,793.

Dallas.

Baylor University College of Medicine. 435-37 South Ervay Street.—Organized in 1900 as the University of Dallas, Medical Department. In 1903 it took its present name and became the Medical Department of Baylor University at Waco. It acquired the charter of Dallas Medical College in 1904. The first class graduated in 1901. The faculty numbers —. The course covers four years of seven months each. The fees are $75 for each of the four years, with a matriculation fee of $5, paid once, and a graduation fee of $25. The Dean is Dr. E. H. Cary. Total registration for 1907-8 was 62; graduates, 11. The ninth session begins Oct. 1, 1908, and ends May 1, 1909.

Southwestern University Medical College.—Organized in 1903. The first class graduated in 1904. It has a faculty of 15 professors and 13 instructors, total 28. The course of instruction covers four years. The fees are: Matriculation, $5, paid once; annual tuition, $75; graduation, $25. The Dean is Dr. John O. McReynolds. Total registration for 1907-8 was 63; graduates, 9. The sixth session begins Oct. 1, 1908, and ends April 30, 1909.

College of Physicians and Surgeons. 108-110 North Ervay Street.—Organized in 1903 as the Bell Medical College. Name changed to the above in 1906. The first class graduated in 1904. The Dean is Dr. Arthur C. Bell. *The Texas State Board of Medical Examiners reports that this college is not in good standing.*

Fort Worth.

Medical Department of Fort Worth University. Calhoun and Fifth Streets.—Organized in 1894. The first class graduated in 1895. It has a faculty of 14 professors and 20 lecturers, assistants, etc, in all 34. The course covers four years of seven months each. The total fees for each of the first three years are $75 and $100 for the fourth year. The Dean is Dr. W. R. Thompson. The total registration for 1907-8 was 108; graduates, 9. The fifteenth session begins Oct. 6, 1908, and ends May 6, 1909.

Galveston.

University of Texas, Department of Medicine. Avenue B and Ninth Street.—Organized in 1891. The first class graduated in 1892. It has a faculty of 10 professors and 19 lecturers. The curriculum embraces four years of eight months each. Fees: First year, $50; second and third, each $20, and $5 for the fourth. The Dean is Dr. William S. Carter. Total registration for 1907-8 was 198; graduates, 25. The eighteenth session begins Oct. 1, 1908, and ends May 29, 1909.

UTAH.

Utah, population 316,331, has one medical college, the Medical Department of the University of Utah, situated at Salt Lake City, which has 61,202 people.

Salt Lake City.

University of Utah, Department of Medicine.—Organized in 1906. Gives only the first two years of the medical course. Each course covers thirty-six weeks. The medical faculty consists of 7 professors and 16 lecturers and assistants, a total of 23. Fees: First year, total $62.50; second year, $68.75. The Dean is Byron Cummings, A.M. The third session begins Sept. 14, 1908, and ends June 2, 1909.

VERMONT.

Vermont, population 350,373, has one medical school, located at Burlington, a town of 21,070 people.

Burlington.

University of Vermont College of Medicine. Pearl Street, College Park.—Organized with complete course in 1822. Classes graduated in 1823 to 1836, inclusive, when the school was suspended. It was reorganized in 1853 and classes were graduated in 1854 and in all subsequent years. The faculty consists of 31 professors and 15 assistants, instructors, etc., in all 46. The course of study covers four years of seven months each. The total fees for each of the first three years are $115 and $140 for the fourth year. The Dean is Dr. H. C. Tinkham; Secretary, H. L. White, A.M. Total registration for 1907-8 was 142; graduates, 33. The next session begins Nov. 11, 1908, and ends June 24, 1909.

VIRGINIA.

Virginia, population 1,973,104, has three medical colleges, one the Medical Department of the University of Virginia, situated in Charlottesville, population 6,449, and two, the Medical College of Virginia and the University College of Medicine, in Richmond, population 87,246.

Charlottesville.

University of Virginia, Department of Medicine.—Organized in 1827. Classes were graduated in 1828 and in all subsequent years, except 1865. It has a faculty of 15 professors and 14 lecturers, instructors, assistants, etc., a total of 29. The requirements for admission are the completion of a three years' high school course or its equivalent, and a year of chemistry, physics, and biology. Fees: First year, $150; second year, $140; third year, $120; fourth year, $100. The Dean is Dr. R. H. Whitehead. The total registration for 1907-8 was 106; graduates, 22. The next session begins Sept. 10, 1908, and ends June 16, 1909.

Richmond.

Medical College of Virginia. Marshall and College Streets.—Organized in 1838 as the Medical Department of Hampden Sydney College. Present title was taken in 1854. Classes were graduated in 1840 and in all subsequent years. It has a faculty of 16 professors and 36 lecturers, instructors, etc., a total of 52. The requirement for admission is a full four-year high school education. The course embraces four years of eight months each. Fees: $100 each year; graduation fee, $30. The Dean is Dr. Christopher Tompkins. Total registration for 1907-8 was 215; graduates, 38. The seventy-first session begins Sept. 15, 1908, and ends May 19, 1909.

University College of Medicine. Eleventh and Clay Streets.—Organized in 1893. The first class graduated in 1894. It has a faculty of 19 professors, 43 lecturers, assistants, etc., a total of 62. The curriculum covers four years of eight months each. The total fees are $100 for each year. The President is Dr. Stuart McGuire; the Dean is Dr. Paulus A. Irving. The total registration for 1907-8 was 158; graduates, 43. The sixteenth session begins Sept. 15, 1908, and ends May 18, 1909.

WEST VIRGINIA.

West Virginia, population 1,076,406, has one medical college, College of Medicine of the West Virginia University, located at Morgantown, a city of 3,900 inhabitants.

Morgantown.

West Virginia University College of Medicine.—Organized in 1902. Gives only the first two years of the medical course. Each college term extends over nine months. The faculty consists of 6 professors and 5 assistants, 11 in all. Tuition to students residing in the state, $25, for others, $50 per year. The Dean is Dr. J. N. Simpson. Total registration for 1907-8 was 43. The seventh session begins Sept. 21, 1908, and ends June 15, 1909.

WISCONSIN.

Wisconsin, population 2,260,930, has three medical colleges, the Medical Department of the University of Wisconsin, which teaches the first two years of the medical course, and is located at Madison, a city having a population of 25,128, and the Milwaukee Medical College and Wisconsin College of Physicians and Surgeons, situated in Milwaukee, a city of 317,903 people.

Madison.

University of Wisconsin College of Medicine.—Organized in 1907. Gives only the first two years of the medical course. For matriculation a candidate must have had in addition to a four-year high school course at least two years in a college of arts and science or an equivalent training. Two years of Latin, a reading knowledge of French and German, and at least a year's work in physics, chemistry and biology are specifically required. It has a faculty of 23 professors and 25 lecturers, instructors, etc., a total of 48. The Dean is Dr. Charles R. Bardeen. The registration for 1907-8 was 26. The second session begins Oct. 1, 1908, and ends June 18, 1909.

Milwaukee.

Milwaukee Medical College, Medical Department of Marquette University, Ninth and Wells Streets.—Organized in 1894. The first class graduated in 1895. It became the Medical Department of Marquette University in 1907. It has a faculty of 31 professors and 22 lecturers, instructors, etc., a total of 53. The course covers four years of eight months each. The total fees are $130 each for the first three years and $145 for the fourth year. The Dean is Dr. Warren B. Hill. The total registration for 1907-8 was 147; graduates 43. The fifteenth session begins Oct. 1, 1908, and ends June 1, 1909.

Wisconsin College of Physicians and Surgeons, Fourth Street and Reservoir Avenue.—Organized in 1893. The first class graduated in 1894. It has a faculty of 20 professors and 29 lecturers, instructors, etc., a total of 49. The curriculum includes four years of eight months each. Fees: Matriculation, paid once, $5; general ticket, $120. The Secretary is Dr. J. C. Phillips. The total registration for 1907-8 was 58; graduates, 9. The seventeenth session begins Sept. 29, 1908, and ends May 27, 1909.

THE AMERICAN MEDICAL ASSOCIATION STANDARDS OF MEDICAL EDUCATION.

The Ideal Standard.

The ideal standard to be aimed at from the present view point should consist of: (A) Preliminary education sufficient to enable the candidate to enter our recognized universities, such qualifications to be passed on by the state authorities. (B) A course of at least one year to be devoted to physics, chemistry and biology, such arrangements to be made that this year could be taken either in a college of liberal arts or in the medical school. (C) Four years in pure medical work, the first two of which should be spent largely in laboratories of anatomy, physiology, pathology, pharmacology, etc., and the last two in close contact with patients in dispensaries and hospitals in the study of medicine, surgery, obstetrics and the specialties. (D) A sixth year as an interne in a hospital or dispensary should then complete the medical course.

Under such a scheme the majority of men would begin the study of medicine between 18 and 19 years of age, and would graduate from the hospital interneship at from 24 to 25. A college education is recognized as a desirable preparation for a limited number of men, but it is thought that it is not and never will be desirable to make such college education a requirement to the study of medicine, as it would make the age of graduation from 27 to 28 years, which is regarded as too old a period at which the young medical man should begin his life's work.

Standard Now Recommended.

The minimum standard now recommended prerequisite to the practice of medicine is as follows:

1. (a) The preliminary requirement to be a four-year high school education or its equivalent, such as would admit the student to one of our recognized universities; (b) and in addition (as soon as conditions warrant), a year of not less than nine months, devoted to the study of physics, chemistry, biology and one modern language, preferably German, to be taken either in a college of liberal arts or in a recognized medical college having a preliminary year devoted exclusively to the subjects mentioned.

2. There should be a requirement that previous to matriculation in a medical college every student must secure from the State Examining Board a "medical student's entrance certificate," which would be issued either on presentation of credentials of preliminary education not less than that laid down by requirement one, or on passing an examination given by the Board and which will satisfy the Board that the student has an equivalent education.

3. A medical training in a medical college, having four years of not less than thirty weeks each year, exclusive of holidays, of thirty hours per week of actual work.

4. Graduation from an approved medical college required to entitle the candidate to an examination before a state examining board.

5. The passing of a satisfactory examination before a state examining board.

A Medical College in Good Standing.

Below is a schedule of the minimum requirements, laboratory equipment and clinical facilities which should obtain in a medical college before it can be considered as giving a satisfactory course or be determined as a medical college in good standing:

I. REQUIREMENTS.

1. Matriculation.—For matriculation the medical college should require of each student:

(1) A certificate of good moral character, signed by two reputable physicians of the state in which the applicant resides; and,

(2) As evidence of satisfactory preliminary education, a medical student's matriculation certificate, issued by the state board of medical examiners or its authorized agent, this certificate to be issued on (A) acceptable credentials, or (B) on successfully passing a preliminary examination.

1. *Acceptable Credentials.*—(a) A degree from an accredited university or college of arts or science; or,

(b) A diploma from an accredited four year high school, normal school or academy which required for admission eight years of study in the primary and intermediate grades and which furnished a preliminary education of at least 15 units (30 points or credits, or 75 counts), as given in the following outline:

STATEMENT OF ACADEMIC OR SECONDARY WORK FOR ADMISSION TO MEDICAL COLLEGE BY CREDENTIALS OR EXAMINATION.

Required Branches.

	Units	Points	Counts
Rhetoric and composition	1	2	5
History of English and American literature	1	2	5
Algebra, through quadratics	1	2	5
Geometry, plane	1	2	5
Latin, grammar and 4 books of Cæsar or equivalent	2	4	10
U. S. History and Civics	1	2	5
Physics, with laboratory work	1	2	5
Total	8	16	40

Elective Branches.

Seven units, 14 points or credits, or 35 counts to be selected from the following subjects. Not more than 2 units, 4 points or credits or 10 counts from any one group.

	Units	Points	Counts
Group 1			
English Classics (College Entrance Examining Board list)	2	4	10
Group 2			
Geometry, solid	.5	1	2.5
Trigonometry	.5	1	2.5
Group 3			
Latin, Cicero (7 orations)	1	2	5
Latin, Virgil (6 books)	1	2	5
Group 4			
German, grammar with 2 years' certified work	2	4	10
French, grammar with 2 years' certified work	2	4	10
Spanish, grammar with 2 years' certified work	2	4	10
Group 5			
History, Greece and Rome	1	2	5
History, medieval and modern	1	2	5
History, England, half year's work	.5	1	2.5
History, France, half year's work	.5	1	2.5
Group 6:			
Biology, with laboratory work	1	2	5
Botany, with laboratory work	.5	1	2.5
Zoology, with laboratory work	.5	1	2.5
Physiology and Hygiene, with laboratory work	1	2	5
Group 7:			
Chemistry, with laboratory	1	2	5
Total	18	36	90

A *unit* is the credit value of 36 weeks work of 5 recitation periods per week each recitation period to be of not less than 45 minutes

A *point* is the credit value of 18 weeks work of 5 recitation periods per week, each recitation period to be of not less than 45 minutes

A *count* is the credit value of one recitation period per week of not less than 45 minutes through 36 weeks

It is urged that within a reasonable time the minimum requirements as given in paragraph (b) will be enlarged to include an additional year in university physics, chemistry, biology and a reading knowledge of at least one modern language, preferably German or French

B Preliminary Examination—The preliminary examination should be taken before the board of medical examiners or its authorized agent, and should represent the work of 15 units (30 points or credits or 75 counts) in accordance with the above outline Under no circumstances must this examination be given by any one connected with the medical college

Later, when the requirement is considered reasonable, university courses in physics, chemistry, biology and modern languages should be required in this examination

2 *Medical Education*—The medical college should give a strictly graded course covering four years of not less than thirty weeks each year, exclusive of holidays Each year should cover not less than thirty hours per week of scheduled classroom work in lectures recitations, laboratory and clinical work At least forty two calendar months should elapse between the dates of matriculation and graduation The complete course should approximate 3600 hours and include

(a) Two years of study, consisting largely of laboratory work in anatomy, histology, embryology, physiology chemistry, pharmacology, physiologic chemistry, bacteriology and pathology

(b) Two years of clinical work largely in hospitals and dispensaries with thorough courses in internal medicine (including physical diagnosis pediatrics, nervous and mental diseases), surgery (including surgical anatomy and operative surgery on the cadaver), obstetrics, gynecology materia medica, pharmacology, laryngology, rhinology, ophthalmology otology dermatology, hygiene and medical jurisprudence There should also be a laboratory course in clinical microscopy including hematology, and the hospital courses should be accompanied by work in properly equipped clinical laboratories

3 *Advanced Standing*—(a) Advanced standing may be granted to the extent of three years of work taken at other recognized colleges

(b) In giving advanced standing the college should not discriminate against its own full course students It is meant by this that students should not be given full standing when they come from colleges not giving equivalent courses

(c) Before granting any advanced standing the dean or secretary of the school to which the student seeks admission should obtain from the corresponding officer of the school from which the student comes a full statement of his credentials, so far as preliminary and medical education is concerned, together with the standing of the student in each course he has taken

4 *Graduation*—The medical college should require of each student before graduation·

(a) Compliance with the above given requirements of preliminary and medical education

(b) An attendance of at least 80 per cent on each course of instruction above mentioned

(c) The passing of a final examination in each course of instruction above mentioned with a percentage of at least 75

(d) The individual dissection of at least one lateral half of a human cadaver

(e) The individual attendance on and management of at least two maternity cases

(f) The work of at least the fourth or senior year must be taken in the medical college granting the degree

II EQUIPMENT AND FACILITIES

1 *Buildings*—The medical college buildings should be well lighted sanitary and commodious, with ample space for laboratories amphitheaters, examining, lecture recitation and special research rooms, as well as storage rooms and a suitable place for such animals as are used in experimental work

2 *Laboratories*—There should be well equipped laboratories for practical anatomy, histology, embryology, physiology, chemistry, physiolgic chemistry, pharmacology, bacteriology and pathology, and these laboratories should be officered by trained instructors paid to devote their entire time to the preparation of materials used in instruction and to teaching and research By a well equipped laboratory is understood a laboratory provided with all the microscopes and other apparatus necessary to enable each student to carry on the work of that department intelligently and successfully

3 *Hospitals, Dispensaries and Clinical Facilities*—(a) The main hospital and dispensary should be in close proximity to the college building, of easy access to the students, and should be under the control of the college at least so far as clinical material is concerned

(b) The hospital material available for clinical purposes should be in proportion to a daily average of at least 200 patients to 100 students in the senior class

(c) The dispensary material should be carefully classified and properly used

4 *Library, Museum, Charts, Etc*—(a) Library The medical college should have a working medical library, including the more recent text and reference books as well as ten or more of the chief medical periodicals This library room should be easily accessible to the students should be provided with suitable tables and chairs, and should have an attendant in charge

(b) Museum There should be a medical museum having its various anatomic, embryologic, pathologic and other specimens carefully prepared, labeled and indexed in order that any specimen may be easily found and employed for teaching purposes The value of the pathologic collection could be greatly augmented by having slides showing the microscopic findings in each case carefully prepared, labeled, indexed and kept easily accessible Clinical records of these cases should also be drawn up, indexed and filed for easy reference

(c) Charts, Models, Stereopticons, Etc—The medical college should have a supply of anatomic charts embryologic models and other apparatus, such as a stereopticon or a reflectoscope, as well as microphotographic, Roentgen ray or other apparatus, which would be of service in the teaching of medicine

III CONDUCT OF THE COLLEGE

1 The medical college should literally observe its published requirements for admission, tuition, time of attendance on the sessions and graduation, which it should definitely set forth together with complete lists of its matriculates and annual graduates, in regular annual catalogues or announcements

2 New medical colleges may be recognized on application if on examination they are found to comply with the above requirements

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THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

The requirements for admission to and graduation from colleges holding membership are as follows

Preliminary Education (*a*) A bachelor s degree from an approved college or university (*b*) A diploma from an accredited high school, normal school or academy requiring for admission evidence of the completion of an eight year course in primary and intermediate grades, and for graduation not less than four years of study embracing not less than two years (4 points) of Latin two years (4 points) of mathematics, two years (4 points) of English one year (2 points) of history, one year (2 points) of physics and six years (12 points) of further credit in language literature, history or science (*c*) An examination in the following branches, totaling 30 points A Required (16 points) Mathematics (4 points), English (4 points), History (2 points), Latin (4 points), Physics (2 points)

B Elective (14 points) English language and literature, 4 points, language, German, French, Spanish or Greek in each not less than 2 points; solid geometry and trigonometry (½ year each), 2 points, biology (one year) or botany and zoology (½ year each), 2 points, chemistry (1 year), 2 points, physical geography and geology (½ year each), 1 point, physiology and hygiene (½ year each), 1 point, astronomy (½ year), 1 point; drawing (½ year), 1 point One point in any subject in a high school or academic course demands not less than five periods per week of forty five minutes each for eighteen weeks (d) Certificates from reputable instructors recognized by any state board of medical examiners duly authorized by law or by the superintendents of public instruction in states having no board of examiners may be accepted in lieu of any part of this examination This examination must be conducted by or under the authority of the board of examiners or of the superintendent of public instruction of the city or state in which the college is located In no case shall it be conducted by any person connected with the faculty medical or otherwise, of the institution to which the student is seeking admission

A student may be allowed to enter on his medical work conditioned in not more than six points, and these conditions must be removed by satisfactory examination before he is allowed to enter on the second year of his medical course

Advanced Standing Colleges in membership in this Association may honor the official credentials presented by students from other colleges having the standard requirements maintained by members of this Association excepting for the fourth year of their course, but no member shall admit a student to advanced standing without first communicating with the college from which such student desires to withdraw, and receiving from the dean of such college a

(*Continued on page 590*)

Morgantown.

West Virginia University College of Medicine—Organized in 1902 Gives only the first two years of the medical course. Each college term extends over nine months The faculty consists of 6 professors and 5 assistants, 11 in all Tuition to students residing in the state, $25, for others, $50 per year The Dean is Dr. J. N. Simpson Total registration for 1907 8 was 43 The seventh session begins Sept 21, 1908, and ends June 15, 1909

WISCONSIN.

Wisconsin, population 2,260,930, has three medical colleges, the Medical Department of the University of Wisconsin, which teaches the first two years of the medical course, and is located at Madison, a city having a population of 25,128, and the Milwaukee Medical College and Wisconsin College of Physicians and Surgeons, situated in Milwaukee, a city of 317,903 people.

Madison.

University of Wisconsin College of Medicine—Organized in 1907 Gives only the first two years of the medical course For matriculation a candidate must have had in addition to a four-year high school course at least two years in a college of arts and science or an equivalent training Two years of Latin, a reading of French and German, and at least a year's work in hemistry and biology are specifically required It has a n 23 professors and 25 lecturers, instructors etc, a total The Dean is Dr Charles R Bardeen The registration for -8 was 26 The second session begins Oct 1, 1908, and ends June 18, 1909

Milwaukee.

Milwaukee Medical College Medical Department of Marquette University. Ninth and Wells Streets—Organized in 1894 The first class graduated in 1895 It became the Medical Department of Marquette University in 1907 It has a faculty of 31 professors and 22 lecturers, instructors, etc, a total of 53 The course covers four years of eight months each The total fees are $130 each for the first three years and $145 for the fourth year. The Dean is Dr Warren B Hill The total registration for 1907-8 was 147; graduates 43 The fifteenth session begins Oct 1, 1908, and ends June 1, 1909

Wisconsin College of Physicians and Surgeons Fourth Street and Reservoir Avenue—Organized in 1893 The first class graduated in 1894 It has a faculty of 20 professors and 29 lecturers, instructors, etc, a total of 49 The curriculum includes four years of eight months each Fees: Matriculation, paid once, $5 general ticket $120 The Secretary is Dr J C Phillips The total registration for 1907-8 was 58; graduates, 9 The seventeenth session begins Sept 29, 1908, and ends May 27, 1909

THE AMERICAN MEDICAL ASSOCIATION STANDARDS OF MEDICAL EDUCATION.

The Ideal Standard.

The ideal standard to be aimed at from the present view point should consist of (A) Preliminary education sufficient to enable the candidate to enter our recognized universities, such qualifications to be passed on by the state authorities (B) A course of at least one year to be devoted to physics, chemistry and biology, such arrangements to be made that this year could be taken either in a college of liberal arts or in the medical school (C) Four years in pure medical work, the first two of which should be spent largely in laboratories of anatomy, physiology, pathology, pharmacology, etc, and the last two in close contact with patients in dispensaries and hospitals in the study of medicine, surgery, obstetrics and the specialties (D) A sixth year as an interne in a hospital or dispensary should then complete the medical course

Under such a scheme the majority of men would begin the study of medicine between 18 and 19 years of age, and would graduate from the hospital interneship at from 24 to 25. A college education is recognized as a desirable preparation for a limited number of men, but it is thought that it is not and never will be desirable to make such college education a requirement to the study of medicine, as it would make the age of graduation from 27 to 28 years, which is regarded as too old a period at which the young medical man should begin his life's work.

Standard Now Recommended.

The minimum standard now recommended prerequisite to the practice of medicine is as follows:

1. (a) The preliminary requirement to be a four year high school education or its equivalent, such as would admit the student to one of our recognized universities; (b) and in addition (as soon as conditions warrant), a year of not less than nine months, devoted to the study of physics, chemistry, biology and one modern language, preferably German, to be taken either in a college of liberal arts or in a recognized medical college having a preliminary year devoted exclusively to the subjects mentioned.

2. There should be a requirement that previous to matriculation in a medical college every student must secure from the State Examining Board a "medical student's entrance certificate," which would be issued either on presentation of credentials of preliminary education not less than that laid down by requirement one, or on passing an examination given by the Board and which will satisfy the Board that the student has an equivalent education.

3. A medical training in a medical college, having four years of not less than thirty weeks each year, exclusive of holidays, of thirty hours per week of actual work.

4. Graduation from an approved medical college required to entitle the candidate to an examination before a state examining board.

5 The passing of a satisfactory examination before a state examining board

A Medical College in Good Standing.

Below is a schedule of the minimum requirements, laboratory equipment and clinical facilities which should obtain in a medical college before it can be considered as giving a satisfactory course or be determined as a medical college in good standing:

I. REQUIREMENTS.

1 Matriculation—For matriculation the medical college should require of each student:

(1) A certificate of good moral character, signed by two reputable physicians of the state in which the applicant resides; and.

(2) As evidence of satisfactory preliminary education, a medical student's matriculation certificate, issued by the state board of medical examiners or its authorized agent, this certificate to be issued on (A) acceptable credentials, or (B) on successfully passing a preliminary examination.

A. Acceptable Credentials.—(a) A degree from an accredited university or college of arts or science; or,

(b) A diploma from an accredited four-year high school, normal school or academy which required for admission eight years of study in the primary and intermediate grades and which furnished a preliminary education of at least 15 units (30 points or credits, or 75 counts), as given in the following outline:

STATEMENT OF ACADEMIC OR SECONDARY WORK FOR ADMISSION TO MEDICAL COLLEGE BY CREDENTIALS OR EXAMINATION.

Required Branches.

	Units	Points	Counts
Rhetoric and composition ..	1	2	5
History of English and American literature	1	2	5
Algebra, through quadratics	1	2	5
Geometry, plane . .	1	2	5
Latin grammar and 4 books of Cæsar or equivalent ..	2	4	10
U S History and Civics	1	2	5
Physics, with laboratory work.	1	2	5
Total	8	16	40

Elective Branches

Seven units, 14 points or credits, or 35 counts to be selected from the following subjects Not more than 2 units, 4 points or credits or 10 counts from any one group.

	Units	Points.	Counts.
Group 1.			
English Classics (College Entrance Examining Board list)	2	4	10
Group 2			
Geometry, solid	.5	1	2.5
Trigonometry	.5	1	2.5
Group 3			
Latin, Cicero (7 orations)	1	2	5
Latin, Virgil (6 books)	1	2	5
Group 4			
German, grammar with 2 years' certified work . . .	2	4	10
French, grammar with 2 years' certified work . . .	2	4	10
Spanish, grammar with 2 years' certified work	2	4	10
Group 5:			
History, Greece and Rome	1	2	5
History, medieval and modern.	1	2	5
History, England half year's work.	.5	1	2.5
History, France, half year's work	.5	1	2.5
Group 6.			
Biology, with laboratory work	1	2	5
Botany, with laboratory work	.5	1	2.5
Zoology, with laboratory work .	.5	1	2.5
Physiology and Hygiene, with laboratory work	1	2	5
Group 7:			
Chemistry, with laboratory . ..	1	2	5
Total	18	36	90

A *unit* is the credit value of 36 weeks work of 5 recitation periods per week each recitation period to be of not less than 45 minutes

A *point* is the credit value of 18 weeks work of 5 recitation periods per week each recitation period to be of not less than 45 minutes

A *count* is the credit value of one recitation period per week of not less than 45 minutes through 36 weeks

It is urged that within a reasonable time the minimum requirements as given in paragraph (b) will be enlarged to include an additional year in university physics, chemistry, biology and a reading knowledge of at least one modern language, preferably German or French

B Preliminary Examination—The preliminary examination should be taken before the board of medical examiners or its authorized agent and should represent the work of 15 units (30 points or credits or 75 counts) in accordance with the above outline Under no circumstances must this examination be given by any one connected with the medical college

Later when the requirement is considered reasonable, university courses in physics, chemistry, biology and modern languages should be required in this examination

2 *Medical Education*—The medical college should give a strictly graded course covering four years of not less than thirty weeks each year, exclusive of holidays Each year should cover not less than thirty hours per week of scheduled classroom work in lectures, recitations, laboratory and clinical work At least forty two calendar months should elapse between the dates of matriculation and graduation The complete course should approximate 3600 hours and include

(a) Two years of study, consisting largely of laboratory work in anatomy, histology, embryology, physiology, chemistry, pharmacology, physiologic chemistry, bacteriology and pathology

(b) Two years of clinical work largely in hospitals and dispensaries with thorough courses in internal medicine (including physical diagnosis, pediatrics, nervous and mental diseases), surgery (including surgical anatomy and operative surgery on the cadaver), obstetrics, gynecology, materia medica, pharmacology, laryngology, rhinology, ophthalmology, otology, dermatology, hygiene and medical jurisprudence There should also be a laboratory course in clinical microscopy including hematology, and the hospital courses should be accompanied by work in properly equipped clinical laboratories

3 *Advanced Standing*—(a) Advanced standing may be granted to the extent of three years of work taken at other recognized colleges

(b) In giving advanced standing the college should not discriminate against its own full course students It is meant by this that students should not be given full standing when they come from colleges not giving equivalent courses

(c) Before granting any advanced standing the dean or secretary of the school to which the student seeks admission should obtain from the corresponding officer of the school from which the student comes a full statement of his credentials, so far as preliminary and medical education is concerned, together with the standing of the student in each course he has taken

4 *Graduation*—The medical college should require of each student before graduation

(a) Compliance with the above given requirements of preliminary and medical education

(b) An attendance of at least 80 per cent on each course of instruction above mentioned

(c) The passing of a final examination in each course of instruction above mentioned with a percentage of at least 75

(d) The individual dissection of at least one lateral half of a human cadaver

(e) The individual attendance on and management of at least two maternity cases

(f) The work of at least the fourth or senior year must be taken in the medical college granting the degree

II EQUIPMENT AND FACILITIES

1 *Buildings*—The medical college buildings should be well lighted sanitary and commodious with ample space for laboratories amphitheaters, examining lecture, recitation and special research rooms, as well as storage rooms and a suitable place for such animals as are used in experimental work

2 *Laboratories*—There should be well equipped laboratories for practical anatomy, histology, embryology, physiology, chemistry, physiolgic chemistry, pharmacology, bacteriology and pathology, and these laboratories should be officered by trained instructors paid to devote their entire time to the preparation of materials used in instruction and to teaching and research By a well equipped laboratory is understood a laboratory provided with all the microscopes and other apparatus necessary to enable each student to carry on the work of that department intelligently and successfully

3 *Hospitals, Dispensaries and Clinical Facilities*—(a) The main hospital and dispensary should be in close proximity to the college building, of easy access to the students, and should be under the control of the college at least so far as clinical material is concerned

(b) The hospital material available for clinical purposes should be in proportion to a daily average of at least 200 patients to 100 students in the senior class

(c) The dispensary material should be carefully classified and properly used

4 *Library, Museum, Charts, Etc*—(a) Library The medical college should have a working medical library, including the more recent text and reference books as well as ten or more of the chief medical periodicals This library room should be easily accessible to the students should be provided with suitable tables and chairs, and should have an attendant in charge

(b) Museum There should be a medical museum having its various anatomic, embryologic, pathologic and other specimens carefully prepared, labeled and indexed in order that any specimen may be easily found and employed for teaching purposes The value of the pathologic collection could be greatly augmented by having slides showing the microscopic findings in each case carefully prepared, labeled, indexed and kept easily accessible Clinical records of these cases should also be drawn up, indexed and filed for easy reference

(c) Charts, Models, Stereopticons, Etc—The medical college should have a supply of anatomic charts embryologic models and other apparatus, such as a stereopticon or a reflectoscope, as well as microphotographic, Roentgen ray or other apparatus, which would be of service in the teaching of medicine

III CONDUCT OF THE COLLEGE

1 The medical college should literally observe its published requirements for admission, tuition, time of attendance on the sessions and graduation, which it should definitely set forth together with complete lists of its matriculates and annual graduates, in regular annual catalogues or announcements

2 New medical colleges may be recognized on application if on examination they are found to comply with the above requirements

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THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

The requirements for admission to and graduation from colleges holding membership are as follows

Preliminary Education (*a*) A bachelor's degree from an approved college or university (*b*) A diploma from an accredited high school, normal school or academy requiring for admission evidence of the completion of an eight year course in primary and intermediate grades and for graduation not less than four years of study embracing not less than two years (4 points) of Latin two years (4 points) of mathematics two years (4 points) of English one year (2 points) of history, one year (2 points) of physics and six years (12 points) of further credit in language literature history or science (*c*) An examination in the following branches, totaling 30 points A Required (16 points) Mathematics (4 points), English (4 points), History (2 points), Latin (4 points), Physics (2 points)

B Elective (14 points) English language and literature 4 points, language, German, French, Spanish or Greek in each not less than 2 points, solid geometry and trigonometry (½ year each), 2 points, biology (one year) or botany and zoology (½ year each), 2 points, chemistry (1 year), 2 points physical geography and geology (½ year each), 1 point, physiology and hygiene (½ year each), 1 point astronomy (½ year), 1 point, drawing (½ year), 1 point One point in any subject in a high school or academic course demands not less than five periods per week of forty-five minutes each for eighteen weeks (d) Certificates from reputable instructors recognized by any state board of medical examiners duly authorized by law or by the superintendents of public instruction in states having no board of examiners may be accepted in lieu of any part of this examination This examination must be conducted by or under the authority of the board of examiners or of the superintendent of public instruction of the city or state in which the college is located In no case shall it be conducted by any person connected with the faculty medical or otherwise, of the institution to which the student is seeking admission

A student may be allowed to enter on his medical work conditioned in not more than six points, and these conditions must be removed by satisfactory examination before he is allowed to enter on the second year of his medical course

Advanced Standing Colleges in membership in this Association may honor the official credentials presented by students from other colleges having the standard requirements maintained by members of this Association excepting for the fourth year of their course, but no member shall admit a student to advanced standing without first communicating with the college from which such student desires to withdraw, and receiving from the dean of such college a

(*Continued on page 590*)

NAME AND LOCATION OF COLLEGE.	Population of city in which college is located. (Census Bureau estimate, 1906.)	Number of students registered, session of 1907-8		Graduates 1908.		Total number of teachers.	Weeks in college year.	Total students in all colleges in state, 1907-8.	Total graduates all colleges in state, 1908.
		Men.	Women	Men.	Women				
ALABAMA								303	41
Birmingham Medical College, Birmingham—R	45,869	134		16		35	28		
Medical College of Alabama, Mobile.—R	42,903	169		25		21	28		
ARKANSAS								264	31
Arkansas University, Little Rock.—R	39,959	175	2	19	0	28	28		
College of Physicians and Surgeons, Little Rock.—R	39,959	86	1	15	0	38	28		
CALIFORNIA								380	103
Cooper Med. Coll., San Francisco.—R	364,677	94	3	22	2	59	25		
University of California, San Francisco.—R	364,677	31	5	15	1	57	85		
Hahnemann Medical College, San Francisco.—H	364,677	26	7	7	2	32	32		
College of P. and S., San Francisco.—R	364,677	65	5	13	3	45	32		
Oakland Coll. of Med. and Surg., Oakland.—R	73,812	9	1	0	1	30	36		
University of Southern California, Los Angeles.—R	102,479	80	9	25	1	72	33		
College of P. and S., Los Angeles.—R	102,479	33	4	10	0	39	36		
California Eclectic Medical College, Los Angeles.—E	102,479	8		1		27	32		
COLORADO								177	39
Denver and Gross Coll. of Med., Denver.—R	151,920	75	4	20	2	71	32		
Denver College of Physicians and Surgeons, Denver.—P	151,920	44	2	5	1	37	29		
University of Colorado, School of Medicine, Boulder.—R	6,150	46	6	9	2	39	31		
CONNECTICUT								136	29
Yale University Medical Department, New Haven.—R	121,227	136		29		58	36		
DISTRICT OF COLUMBIA								485	96
George Washington University, Washington.—R	307,716	195	3	45	0	76	31		
Georgetown University, Washington.—R	307,716	82		27		74	33		
Howard University Medical Department, Washington.—R	307,716	196	9	22	2	33	33		
GEORGIA								697	136
Atlanta College of P. and S., Atlanta.—R	101,984	231		29		49	28		
Atlanta School of Medicine, Atlanta.—R	101,984	270	4	48	0	40	28		
Georgia Coll. of Eclectic Med. and Surg., Atlanta.—E	101,984	71		23		14	23		
International Medical Missionary College, Atlanta.—R	101,984	3	2	3	1	18			
University of Georgia Medical Department, Augusta.—R	43,125	113		32		23	28		
ILLINOIS								2,715	531
American Medical Missionary College, Chicago.—R	2,049,185	26	16	1	3	25	36		
Bennett Coll. of Eclectic Med. and Surg., Chicago.—E	2,049,185	135	15	24	4	52	32		
College of Medicine and Surgery, Chicago.—Ph.M	2,049,185	16	12		3	12	31		
College of Physicians and Surgeons, Chicago.—R	2,049,185	434	20	139	11	149	34		
Hahnemann Medical College, Chicago.—H	2,049,185	107	10	39	4	86	31		
Hering Medical College, Chicago.—H	2,049,185	48	10	13	3		31		
Illinois Medical College, Chicago.—R	2,049,185	50	3	27	3	50	30		
Jenner Medical College, Chicago.—R*	2,049,185	157	18	29	3	53	38		
Northwestern University, Chicago.—R	2,049,185	533		135		223	32		
Rush Medical College, Chicago.—R	2,049,185	519	37	67	3	248	31		
National Medical University, Chicago.—P	2,049,185	111	12						
Chicago College of Medicine and Surgery, Chicago.—R	2,049,185	308	17	63	7	70	30		
Reliance Medical College, Chicago.—R	2,049,185	58	4			30	38		
INDIANA								344	81
Eclectic Med. Coll. of Indiana, Indianapolis.—E	219,154	12		5			28		
Indiana Univ. Sch. of Med., Bloomington and Indianapolis.—R	219,154	302	6	70	1	175	36		
Physio-Med. Coll. of Indiana, Indianapolis.—Ph M	219,154	24		5		17	31		
IOWA								525	115
Drake University College of Medicine, Des Moines.—R	78,323	66	9	18	0	41	26		
Keokuk Medical College of Phys. and Surg., Keokuk.—R	14,597	109	6	35	2	23	32		
Sioux City College of Medicine, Sioux City.—R	42,520	26		9		26	31		
State University of Iowa, Homeo. Dept., Iowa City.—H	8,497	42	1	9	0	26	36		
State University of Iowa, Medical Dept., Iowa City.—R	8,497	255	11	41	1	52	36		
KANSAS								211	42
Kansas Medical College, Topeka.—R	41,886	66	3	13	0	38	31		
School of Medicine, Univ. of Kansas, Kansas City.—R	77,912	96	5	17	1	90	34		
Eclectic Medical University, Kansas City.—E	77,912	36	5	9	2	37	31		
KENTUCKY								985	254
Kentucky School of Medicine, Louisville.—R	226,129	270		41		47	30		
Louisville and Hospital Medical College, Louisville.—R	223,129	335		102		23	30		
Louisville National Medical College, Louisville.—R	226,129	36		6		22	30		
Southwestern Homeopathic Med. Coll., Louisville.—H	226,129	11	2	1	1	23	30		
University of Louisville, Louisville.—R	226,129	331		100		62	29		
LOUISIANA								569	110
Flint Medical College, New Orleans.—R	314,146	34		8		15	29		
Tulane University, New Orleans.—R	314,146	535		102		69	30		
MAINE								93	29
Medical School of Maine, Portland.—R	55,167	93		29		35	32		
MARYLAND								1,338	344
Baltimore Medical College, Baltimore.—R	553,669	323		82		69	32		
College of Phys. and Surg., Baltimore.—R	553,669	253		68		55	32		
Johns Hopkins University, Baltimore.—R	553,669	262	19	67	1	103	32		
Atlantic Medical College, Baltimore.—P	553,669	31	3	21	1	50	30		
University of Maryland, Baltimore.—R	553,669	316		73		62	32		
Woman's Medical College, Baltimore.—R	553,669		28		11	31	32		
Maryland Medical College, Baltimore.—R	553,669	100		20		22	32		
MASSACHUSETTS								933	171
Boston University School of Medicine, Boston.—H	602,278	74	28	12	7	61	32		
College of Physicians and Surgeons, Boston.—R	602,278	162		26		45	32		
Harvard University, Medical School, Boston.—R	602,278	298		70		166	36		
Tufts Medical College, Boston.—R	602,278	336	35	51	5	101	32		
MICHIGAN								640	123
Detroit College of Medicine, Detroit.—R	353,535	146		30		103	33		
Detroit Homeopathic Medical College.—Detroit.—H	353,535	20	2	5	1	36	32		
University of Michigan, Dept. of Medicine, Ann Arbor.—R	14,645	369	21	65	7	65	36		
University of Michigan, Homeopathic Dept., Ann Arbor.—H	14,645	72	10	10	5	11	36		
MINNESOTA								293	69
University of Minnesota, Homeo. Dept., Minneapolis.—H	273,825	6	0	3	0	75	31		
University of Minnesota, Dept. of Med., Minneapolis.—R	273,825	158	8	31	1	114	31		
Hamline University, Minneapolis.—R	273,725	121	5	31					
MISSISSIPPI								133	11
University of Mississippi, Vicksburg.—R	15,710	28				9	34		
Mississippi Medical College, Meridian.—R	20,503	103	2	11	0	16	28		

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* Night schools. † Figures for 1906-7. R, Regular; H, Homeopathic; E, Eclectic; Ph.M., Physio-Medical; P, Panpathic.

NAME AND LOCATION OF COLLEGE.	Population of city in which college is located. (Census Bureau estimate, 1906.)	Number of students registered, session of 1907-8		Graduates 1908.		Total number of teachers.	Weeks in college year.	Total students in all colleges in state, 1907-8.	Total graduates all colleges in state, 1908.
		Men.	Women	Men.	Women				
MISSOURI								1,448	383
University Medical College, Kansas City.—R.	182,376	192		64		53	32		
Kansas City Hahnemann Med. Coll., Kansas City.—H.	182,376	57	5	14	1	43	33		
Ensworth Med. Coll., St. Joseph.—R.	118,004	91		25		34	31		
Barnes Medical College, St. Louis.—R.	649,320	300	25	69	9	69	32		
St. Louis University, St. Louis.—R.	649,320	241		63		105	31		
St. Louis College of Phys. and Surg., St. Louis.—R.	649,320	164		49		39	29		
American Medical College, St. Louis.—E.	649,320	41		8		17	29		
Hippocratean College of Medicine.—R*	649,320	28	6			30	33		
Homeopathic Med. Coll. of Missouri, St. Louis.—H.	649,320	25	2	9	0	27	30		
Washington University, St. Louis.—R.	649,320	206	2	59	0	92	32		
University of Missouri, Columbia.—R.	7,800	57	8	7	1	25	34		
NEBRASKA								310	85
University of Nebraska, Omaha.—R.	124,167					82	32		
Creighton Medical College, Omaha.—R.	124,167					52	32		
Lincoln Medical College, Lincoln.—E.	48,232	48	2	18	0	46	36		
Nebraska College of Medicine, Lincoln.—R.	48,232	32	2	2	0	40	35		
NEW HAMPSHIRE								58	9
								2,170	461
College of Physicians and Surgeons, New York.—R.	4,113,013	322		81		163	34		
Cornell University, New York.—R.	1,113,013	293	24	57	1	181	33		
Eclectic Medical College, New York.—E.	4,113,013	46	10	5	2	30	32		
Long Island College Hospital, New York.—R.	1,113,013	337		89		99	30		
New York Homeo. Med. College, New York.—H.	1,113,013	80		15		74	30		
New York Woman's Medical College, New York.—H.	4,113,043		20		3	43	30		
University and Bellevue Medical College, New York.—R.	4,113,013	[illegible]		[illegible]					
								382	61
University of North Carolina, Raleigh.—R.	14,225	111		12		44	34		
North Carolina Medical College, Charlotte.—R.	22,009	82		6		28	30		
Wake Forest School of Medicine, Wake Forest.—R.	823	40				46	34		
NORTH DAKOTA								20	0
University of North Dakota, University (Grand Forks).—R.	10,127	20	0			16	35		
OHIO								768	159
Western Reserve University, Cleveland.—R.	460,327	104	0	30	0	94	34		
Cleveland Coll. of Phys. and Surg., Cleveland.—R.	460,327	82	8	18	2	60	30		
Clev	460,327	37	6	9	1	57	31		
Ecl	345,230	91		23		25	30		
Me	345,230	115	2	25	1	61	32		
Pul H.	345,230	11	4	0	1	32	31		
Miami Medical College, Cincinnati.—R.	345,230	68	2	15	1	61	32		
Starling-Ohio Medical College, Columbus.—R.	145,414	204	5	28	2	71	32		
Toledo Medical College, Toledo.—R.	159,980	26	3	3	0	46	34		
OKLAHOMA								29	2
University	3,010	8				12	35		
Epworth U , Oklahoma City.—R.	20,990	20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
OREGON								123	20
Universit									
Willamet									
PENNSYLV								2,518	410
Temple College of Medicine, Philadelphia.—R*	1,441,735	126	8	8	0	64	36		
University of Pennsylvania, Philadelphia.—R.	1,441,735	604		118		157	35		
Hahnemann Medical College, Philadelphia.—H.	1,441,735	168		37		73	33		
Jefferson Medical College, Philadelphia.—R.	1,441,735	693		126		135	33		
Woman's Medical College, Philadelphia.—R.	1,441,735		[illegible]						
SOI								153	17
SOI								3	0
University of South Dakota, College of Med., Vermilion.—R.	2,183	3							
TENNESSEE								1,888	109
Tennessee									
Knoxville	[illegible]	19	4	4	0	11	28		
University of Nashville, Nashville.—R.	84,703	302		67		30	30		
Vanderbilt University, Nashville.—R.	84,703	207		40		39	30		
University of Tennessee, Nashvile.—R.	84,703	137		40		26	30		
Meharry Medical College, Nashville.—R.	84,703	274	11	75	3	21	28		
Memphis is.—R.	125,235	386		83		32	28		
College of is.—R.	125,235	69		15		52	28		
University R.	125,235	33	2	9	0	20	28		
University	500	99		31		21	28		
Chattanoo —R.	[illegible]	[illegible]							
TEXAS								572	81
Fort									
Unive									
Bayl									
Phys. Med. Coll. of	[illegible]	59	3	11	0	36	28		
Southwestern Unive	52,793	38		4					
College of Physicians and Surgeons, Dallas.—R†	52,793	62	1	8	1	28	[illegible]		
UTAH								28	0
VEI								142	33
VIRGINIA									
Medical								479	105
Universi									
								24	0
								231	52
Wisconsin Colleg R.	[illegible]	57	1	9	0	49	32		
University of Wisconsin, College of Medicine, Madison.—R.	25,128	23	3			48	31		

* Night schools. † Figures for 1906-7. R, Regular; H, Homeopathic; E, Eclectic; Ph.M., Physio-Medical; P, Panpathic.

Number.	NAME OF COLLEGE.	1 Alabama 683	2 Arizona 15	3 Arkansas 119	4 California 408	5 Colorado 156	6 Connecticut 273	7 Delaware 53	8 Dist. Columbia 121	9 Florida 132	10 Georgia 655	11 Idaho 24	12 Illinois 1,749	13 Indiana 711	14 Iowa 724	15 Kansas 468	16 Kentucky 630	17 Louisiana 403	18 Maine 182	19 Maryland 347	20 Massachusetts 880	Number.
1	Birmingham Medical College.—R.	120								2	1			1				2				1
2	Medical College of Alabama.—R.	156	1							1												2
3	Arkansas University, Medical Dept.—R.			151									1		1	1	1	5				3
4	College of Physicians and Surgeons.—R.		3	51	1								3			1	1	3		1		4
5	Cooper Medical College.—R.				82								1	1	1				1		2	5
6	University of California, Medical Dept.—R.				33								1									6
7	Hahnemann Med. Coll. of the Pacific.—H.				31																	7
8	Coll. of P. and S., San Francisco.—R.				53						1			1								8
9	Oakland Coll. of Med. and Surgery.—R				8																	9
10	Univ. of So. California, Coll. of Med.—R.		1		82								1									10
11	College of P. and S., Los Angeles.—R.		1		6								3	3	2	1						11
12	California Medical College, Los Angeles.—E.				8																	12
13	Denver and Gross Coll. of Med.—R.					45						1	4	3	3	2				1		13
14	Denver Coll. of Phys. and Surg.—P.					46																14
15	Univ. of Colorado, School of Medicine.—R				1	23			1			2	3	1	1				1		2	15
16	Yale University, Dept. of Medicine.—R						93						3		1						8	16
17	George Wash. Univ., Dept. of Med.—R.	2			1	2			42	1	1		11	2	3	4	2	3		12	3	17
18	Georgetown Univ., School of Med.—R.	1			2		5		16											1	7	18
19	Howard University, Medical Dept.—R.	4					1	2	46	3	11		3	1			1	6		8	2	19
20	Atlanta College of Phys. and Surg.—R.	28								21	152						1	1				20
21	Atlanta School of Medicine.—R.	25	1							19	106							1				21
22	Georgia Coll. of Eclectic M. and S.—E.	6								3	58											22
23	Medical College of Georgia.—R.									4	87							1				23
24	Internat. Med. Miss. Coll., Atlanta.—R.										4											24
25	American Medical Missionary Coll.—R.	1			1						1		3	2	1	2						25
26	Bennett Coll. of Eclectic M. and S.—E.	2		3	1	2	1	1			1	2	51	8	6	2	1	1	1			26
27	Illinois Medical College.—R												21	22			1	1				27
28	College of Medicine and Surgery.—Ph M.												17	1	2							28
29	College of Physicians and Surgeons.—R.			1	1	2			1		1		270	23	17	8	5	1				29
30	Hahnemann Med. Coll. and Hospital.—H†			2									45	11	14	6						30
31	Hering Medical College.—H†												35	4	2	3						31
32	Jenner Medical College.—R.												175									32
33	Northwestern University Med. School.—R.	2			8	5						3	141	46	74	18	3	2				33
34	Rush Medical College.—R	1		4	11	3			1	1	1	1	210	34	63	16	3	2	1			34
35	National Medical University.—P.												123									35
36	Chicago Coll. of Med. and Surgery.—R.	2		1	2	1	1						121	29	15	6	6				4	36
37	Reliance Medical College.—R.												22	6	2		2			1		37
38	Physio-Medical Coll. of Indiana.—Ph.M.													24								38
39	Eclectic Medical College of Indiana.—E.													11								39
40	Indiana University School of Med.—R.										2		3	282			1					40
41	Drake University Coll. of Medicine.—R.					1							1		63	2						41
42	Keokuk Med. Coll. of P. and S.—R.				1							1	33	1	45	5						42
43	Sioux City College of Medicine.—R.														26							43
44	State Univ. of Iowa, Hom. Med. Dept.—H.											1	1		36	1						44
45	State Univ. of Iowa, Med. Dept.—R.												10		236					1		45
46	Kansas Medical College.—R.						1									61						46
47	School of Medicine, Univ. of Kansas.—R.															92						47
48	Western Eclectic Coll. of Med. and Surg.—E.			3	1	1								1	2	12		1				48
49	Kentucky School of Medicine.—R*	2	1	5						3	4	2	5	24			123	6			2	49
50	Louisville and Hospital Medical College.—R.	4		12	1					2	1		10	31	2	4	172	4	1		1	50
51	Louisville National Medical College.—R.	1								1				8		1	17					51
52	Southwestern Homeopathic Med. Coll.—H.													4			7			1		52
53	Univ. of Louisville, Medical Dept.—R.	3		3	1		2			2	2		14	27	7	1	148	6	1	1		53
54	Flint Med. Coll. of New Orleans Univ.—R.	1		1							1							14				54
55	Tulane University, Medical Dept.—R.	62	1	15						8	12							238	1			55
56	Med. School of Maine, Bowdoin Coll.—R.																		80		8	56
57	Baltimore Medical College.—R.	2		2	1		26	1		1	1								10	48	37	57
58	College of P. and S. of Baltimore.—R.	2					17	2		1	2					1			2	34	19	58
59	Johns Hopkins Medical School.—R.	6		3	12	1	17	1	3	1	6		5	4	6	4	8	3	6	33	3	59
60	Atlantic Medical College.—P†						1	2											1	32		60
61	Woman's Med. Coll. of Baltimore.—R.						2													4	2	61
62	Univ. of Maryland, School of Med.—R.			1			5	8	1	5	5			1			1	1	1	19	2	62
63	Maryland Medical College.—R.	1					4	1			2			1					1	31	4	63
64	Boston University School of Med.—H.				1		2											1	4		61	64
65	College of Physicians and Surgeons.—R†						4	3											4		123	65
66	Harvard University Medical School.—R.			2	11	3	4		1				5	1	1	1	2		10		174	66
67	Tufts College Medical School.—R.						6						1						18		289	67
68	Detroit College of Medicine.—R.					1							2	4								68
69	Detroit Homeopathic Med. College.—H.																					69
70	Univ. of Michigan, Dept. of M. and S.—R.	1			5	2	1				2	2	22	25	5	1	6		1		2	70
71	Univ. of Mich., Homeo. Med. College.—H												2	4	2							71
72	Coll. of Hom. M. and S., U. of Minn.—H.																					72
73	College of M. and S., Univ. of Minn.—R.		1										1	1	2							73
74	Hamline University, Medical Dept.—R.												1									74
75	Med. Dept., Univ. of Miss., Oxford.—R.										1							1				75
76	Mississippi Med. Coll., Meridian.—R.	5																1				76
77	Univ. Med. Coll. of Kansas City.—R.			1		1									2	72		1				77
78	Kansas City Hahnemann Med. Coll.—H.				1								3	1	5	21						78
79	Ensworth Medical College.—R.												2		11	15						79
80	Barnes Medical College.—R.			7		2						5	83	3	3	7	7	3				80
81	St. Louis University Med. Dept.—R.	1		7	2	2							59	3	12	7	2	2		1		81
82	St. Louis Coll. of Phys. and Surgs.—R.			2									82	2	3	3	4	1				82
83	American Medical College.—E.																					83
84	Hippocratean College of Medicine.—R.																					84
85	Homeo. Med. College of Missouri.—H.		1	1									10	3	1							85
86	Univ. of Missouri, Dept. of Med.			2		1								1	1	1						86
87	Washington Univ., Medical Dept.—R.	1		4		1							48	4	2	3	3			1		87
88	Univ. of Nebraska, Coll. of Med.—R.														5	1						88
89	John A. Creighton Med. College.—R.				1								1			41					1	89
90	Lincoln Medical College.—E.			1												3						90
91	Nebraska College of Medicine.—R.												1	2	1							91
92	Dartmouth Medical College.—R.						5						2						4		17	92
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	
Number.	Michigan....... 493	Minnesota....... 371	Mississippi 603	Missouri......... 919	Montana 43	Nebraska......... 332	New Hampshire. 119	New Jersey..... 452	New Mexico..... 11	New York.......2,116	Nevada.......... 8	North Carolina.. 502	North Dakota... 70	Ohio............ 912	Oklahoma....... 152	Oregon 131	Pennsylvania.. 2,104	Rhode Island... 93	South Carolina.. 343	South Dakota.... 71	Tennessee...... 677	Texas........... 874	Utah........... 99	Vermont 106	Virginia........ 521	Washington 103	West Virginia... 292	Wisconsin 478	Wyoming 6	Foreign 539	P. I., Ha., P.R. 23	Total.......... 22,602	Number.
1	....	....	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	1	2	....	....	....	....	....	....	....	....	....	134	1
2	....	....	9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	1	....	....	....	....	....	....	....	....	....	....	169	2
3	....	....	....	1	....	....	....	....	....	2	....	....	....	....	8	....	....	....	....	....	....	3	....	....	....	....	....	....	....	....	....	177	3
4	....	....	3	2	....	....	....	....	....	....	....	....	....	....	12	....	....	....	....	....	3	2	....	....	....	....	....	....	....	1	....	87	4
5	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	5	....	97	5
6	1	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	36	6
7	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	33	7
8	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	2	1	....	....	1	....	....	....	9	....	70	8
9	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	10	9
10	1	....	....	....	....	1	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	89	10
11	....	....	....	6	....	....	....	1	2	1	....	....	....	....	1	....	....	....	....	....	....	1	....	....	....	....	....	1	....	8	....	37	11
12	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	8	12
13	....	....	1	3	1	1	1	1	....	5	....	....	....	2	....	....	2	....	....	....	....	....	1	....	....	1	....	....	1	....	....	79	13
14	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	46	14
15	1	....	....	....	....	....	....	....	....	2	....	1	....	2	....	....	1	....	....	....	1	....	....	1	....	....	....	1	....	4	....	52	15
16	3	....	....	1	....	....	....	1	....	6	....	....	....	2	....	1	2	2	....	....	....	....	....	3	....	....	....	....	....	3	....	136	16
17	2	4	....	2	1	2	1	1	....	10	....	8	1	9	3	1	17	2	4	....	2	2	4	1	19	....	4	1	....	6	....	198	17
18	2	....	....	....	....	....	....	1	....	11	....	1	....	1	1	....	10	8	....	....	....	....	....	....	7	....	2	2	....	4	....	82	18
19	....	....	3	2	1	....	....	3	....	10	....	3	....	5	1	....	8	1	9	1	1	4	....	....	26	....	6	....	....	29	2	205	19
20	....	....	1	....	....	....	....	....	1	1	....	6	....	....	2	....	....	....	16	....	....	3	....	....	....	....	....	....	....	1	....	234	20
21	....	....	3	....	....	....	....	....	....	1	....	8	....	....	....	....	....	....	12	....	2	....	....	....	2	....	2	....	....	2	....	274	21
22	....	....	....	....	....	....	....	....	1	1	....	....	....	....	....	....	....	....	....	....	1	1	....	....	....	....	....	....	....	....	....	71	22
23	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	17	....	....	....	....	....	2	....	....	1	....	....	....	113	23
24	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5	24
25	9	....	1	1	....	....	....	....	....	1	....	....	....	6	....	....	1	....	....	1	....	....	....	....	....	....	....	....	....	11	....	42	25
26	12	1	....	1	....	7	1	1	....	4	1	1	1	5	1	1	17	....	....	1	1	1	....	1	1	1	....	2	1	4	....	150	26
27	....	....	....	....	....	....	....	....	....	....	....	1	....	3	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	53	27
28	....	2	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4	....	28	28
29	8	8	....	10	4	7	....	1	....	1	....	....	1	11	1	1	....	....	....	6	2	1	4	....	....	5	1	37	1	7	7	463	29
30	6	2	1	....	1	1	....	....	....	4	....	....	....	5	....	....	2	....	1	....	....	1	....	1	....	....	....	8	....	6	....	117	30
31	3	1	....	2	....	1	....	....	....	1	....	....	....	1	1	....	....	....	....	....	....	1	1	....	....	....	....	....	....	2	....	58	31
32	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	175	32
33	31	28	2	5	5	15	....	1	....	2	....	....	12	11	....	....	....	....	....	12	2	5	15	....	....	7	1	69	1	7	....	533	33
34	15	16	5	20	3	10	....	2	....	4	....	2	5	23	4	6	9	1	....	6	2	9	5	2	3	8	1	51	....	14	....	536	34
35	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	123	35
36	20	8	2	4	1	3	....	....	....	8	....	1	5	18	1	....	20	2	....	2	1	6	5	....	....	....	3	14	....	13	....	325	36
37	1	1	1	....	1	....	....	....	....	2	....	....	1	1	....	....	2	....	....	....	1	1	....	....	....	....	....	3	....	14	....	62	37
38	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	24	38
39	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	12	39
40	1	....	....	....	1	....	....	1	....	....	....	....	2	8	....	....	....	....	....	....	3	1	....	....	....	....	1	....	....	2	....	308	40
41	....	....	....	2	1	....	....	....	....	....	....	....	2	....	1	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	....	75	41
42	....	1	....	12	1	1	....	....	....	....	....	1	1	....	1	1	1	....	....	5	....	....	....	....	....	1	....	2	....	1	....	115	42
43	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	26	43
44	....	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	43	44
45	1	6	....	2	1	1	....	....	....	....	....	....	1	....	....	1	....	....	....	2	....	....	....	....	....	2	....	2	....	....	....	206	45
46	....	....	....	2	....	....	....	....	....	....	....	....	....	2	1	....	1	....	....	....	....	1	....									69	46
47	....	....	....	9																												101	47
48	....	....	....	10																												41	48
49	3	4	2	9																										1	....	270	49
50	1	2	12	10	....	1	....	....	....	4	....	....	....	2	1	....	3	....	1	....	10	20	....	....	2	....	....	20	....	1	....	335	50
51	....	....	2	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1	1	....	....	2	....	1	....	....	....	....	36	51
52	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	13	52
53	1	....	7	11	1	1	....	3	....	2	....	1	....	5	3	....	13	....	5	1	4	10	....	....	2	....	42	....	....	1	....	331	53
54	....	....	12	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....	....	....	....	....	....	....	2	....	34	54
55	....	....	106	....	....	....	....	....	....	1	....	1	....	....	....	....	....	....	4	....	10	71	....	....	1	....	....	....	....	4	....	535	55
56	....	....	....	....	....	....	1	....	....	1	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	2	....	93	56
57	....	....	....	....	....	....	8	28	....	43	....	3	....	5	....	....	46	6	3	....	....	....	....	1	12	....	20	....	....	19	....	323	57
58	....	....	....	....	1	....	....	20	....	16	....	2	....	12	....	....	34	14	1	....	....	....	2	....	5	....	48	....	....	18	....	253	58
59	2	1	1	7	1	1	3	7	....	29	....	9	1	15	....	4	28	2	4	1	2	10	1	1	12	7	4	5	....	1	....	281	59
60	....	....	....	....	....	....	....	....	....	3	....	....	....	....	....	....	12	....	....	....	....	....	....	....	2	....	1	....	....	....	....	37	60
61	....	....	....	....	....	....	....	1	....	3	....	3	....	1	....	....	3	....	1	....	....	....	....	....	....	....	2	1	....	1	4	28	61
62	....	1	....	1	....	....	1	12	1	17	....	33	....	1	1	....	21	....	22	....	1	....	....	1	18	....	13	....	....	17	....	316	62
63	....	....	....	....	....	....	1	4	....	4	....	....	....	....	....	....	11	....	5	....	1	1	....	....	5	....	18	....	....	5	....	100	63
64	2	....	....	....	....	....	4	....	....	5	....	....	....	2	....	....	3	4	....	....	....	....	....	5	....	....	....	....	....	5	....	102	64
65	....	....	....	....	....	....	5	....	....	6	....	....	....	....	....	....	2	3	....	....	....	....	....	....	....	....	....	....	....	12	....	162	65
66	2	2	....	1	....	2	10	3	....	11	....	1	....	7	....	1	4	12	2	....	....	4	....	2	1	2	1	....	1	14	....	298	66
67	....	1	....	....	....	....	20	....	....	4	....	....	....	1	....	....	....	15	1	....	....	....	....	5	....	....	....	....	....	8	2	371	67
68	100	....	....	....	....	....	....	....	....	2	....	....	....	5	....	....	2	....	....	....	1	....	....	....	....	....	....	1	....	28	....	146	68
69	18	....	....	....	....	....	....	....	....	2	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	22	69
70	174	4	1	1	4	2	....	....	....	27	....	2	....	33	1	1	25	1	2	4	....	5	2	1	1	5	1	7	....	8	....	390	70
71	31	1	....	....	....	1	....	....	....	19	1	....	....	9	....	....	7	....	....	2	1											82	71
72	....	6																														6	72
73	....	140																														166	73
74	....	106										....	....	....	....	....	....	....	....	....	....	....	....	1	....	1	....	1	....	2	....	126	74
75	....	....	26	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....										28	75
76	....	....	99																													105	76
77	....																														....	192	77
78	1															....		....	....			....	....	....	....	2	1	1	....	3	....	62	78
79	....	....	....	51	....	3	....	....	....	....	....	....	1	....	5	....	2	....	....	....	....	....	....	....	....	....	....	....	....	1	....	91	79
80	2	1	....	168	1	2	....	....	....	....	....	1	....	....	3	....	....	....	....	2	1	13	....	....	....	2	3	2	....	2	....	323	80
81	4	2	....	94	....	1	....	....	1	2	....	....	....	5	3	1	3	....	....	....	....	2	1	....	....	2	....	16	....	5	1	241	81
82	....	1	2	49	....	....	....	....	....	1	....	....	....	....	1	1	....	....	....	....	2	8	....	....	....	....	....	....	....	2	....	164	82
83	....	....	....	41	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	41	83
84	....	....	....	32	....	1	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	34	84
85	....	....	....	9	....	....	....	....	....	1	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	27	85
86	....	....	....	52	....	....	....	....	....	1	....	....	....	....	1	1	....	....	....	....	....	2	....	....	....	....	....	....	....	2	....	65	86
87	1	....	1	120	....	....	....	....	....	1	....	....	....	1	4	....	....	....	....	....	3	....	....	....	....	1	....	1	....	8	....	208	87
88	....	....	....	2	....	87	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	1	....	....	....	98	88
89	2	2	....	1	....	100	....	....	....	....	....	....	1	1	....	....	1	....	....	5	....	....	....	....	....	1	....	....	....	....	....	158	89
90	....	....	....	1	....	40	....	....	....	....	....	....	....	....	....	1	....	....	....	2	1	1	....	....	....	....	....	....	....	....	....	50	90
91	....	....	....	1	....	27	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	1	....	31	91
92	....	....	....	....	....	....	26	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	3	....	....	....	....	....	....	....	53	92
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	

Number	NAME OF COLLEGE.	1 Alabama 683	2 Arizona 15	3 Arkansas 419	4 California 408	5 Colorado 156	6 Connecticut 273	7 Delaware 53	8 Dist. Columbia 122	9 Florida 132	10 Georgia 655	11 Idaho 24	12 Illinois 1,719	13 Indiana 711	14 Iowa 724	15 Kansas 468	16 Kentucky 630	17 Louisiana 193	18 Maine 182	19 Maryland 347	20 Massachusetts 860	Number.
93	Albany Medical College —R							1													6	93
94	College of Physicians and Surgeons —R	5			3		10				2		5	1	2	1	3		5		8	94
95	Cornell University Medical College —R			1	1		6						2	1			2	1	5		7	95
96	Eclectic Medical College —E						1															96
97	Long Island College Hospital —H						2													1	1	97
98	New York Homeo M C and Hosp H				2		1												1			98
99	N Y Med Coll and Hosp for Women —H																				1	99
100	Univ. and Bellevue Hosp Med Coll —R				3	2	11			1			2	1	1		1		1	1	7	100
101	Fordham Univ. School of Med —R						1															101
102	Syracuse Univ Coll of Med —R						1									1					1	102
103	University of Buffalo, Medical Dept —R																					103
104	Leonard Medical School.—R	11		1					2	8	9							1		2		104
105	Wake Forest School of Medicine —R									1												105
106	North Carolina Medical College —R																					106
107	Univ of North Carolina, Med Dept R									1												107
108	Univ of North Dakota, Med Dept R												1									108
109	Western Reserve Univ Med Coll R													10	2	2					2	109
110	Cleveland Coll of Phys and Surgs R					1																110
111	Cleveland Homeopathic Med Coll —H				1																	111
112	Eclectic Medical Institute —E			1		2					2		6	8	1	1	7					112
113	Medical College of Ohio —R		1											6			16				1	113
114	Pulte Medical College —H																2		1			114
115	Miami Medical College —R												1	2			5					115
116	Starling Ohio Medical College —R												1	1	1						2	116
117	Toledo Medical College —R													1	1							117
118	College of Medicine, Epworth Univ R																					118
119	School of Med , Univ. of Oklahoma —R																					119
120	University of Oregon, Medical Dept R				1							2	1		1							120
121	Willamette Univ , Medical Dept R				1																	121
122	Temple Coll of Phila , Dept of Med R				1		2	2					1									122
123	Univ of Pennsylvania, Dept of Med R	4		3	3	1	4	6		1	5	1	1	5	5	5	1	1	1	2	12	123
124	Hahnemann Med Coll and Hosp —H				1		3	[illegible]					2		3	1	1		2	3	2	124
125	Jefferson Medical College R	5	1	4	7		13	9	1		10		8	3	3	4	4	1	1		9	125
126	Woman's M C. of Pennsylvania —R			1	3			2	4		1					1	2		3		3	126
127	Medico-Chirur Coll of Philadelphia —R				1		4	6				1		2			1	1		2	2	127
128	Western Pennsylvania Med. Coll R				1										1	2						128
129	Med Coll of State of South Carolina R									8	1											129
130	Univ of South Dakota, Coll of Medicine R																					130
131	Tennessee Medical College —R										2		1				4					131
132	Knoxville Medical College —R																					132
133	University of Nashville, Med Dept —R	39		12						8	3		5				10	7				133
134	Vanderbilt University, Med Dept —R	16		5	2						6		4	1			19	9				134
135	University of Tennessee, Med Dept —R	15		2	2					1	1		3		1		7	8				135
136	Meharry Medical College —R	21		13		1				6	20		7	2	2	4	8	11				136
137	Memphis Hospital Medical College —R	14		53						1	2						2	20				137
138	Memphis Coll of Phys and Surgs —R			6							3							1				138
139	Univ of West Tennessee, Med Dept —R	1		5							1							5				139
140	University of the South —R	20		4						2	9			1			2	10				140
141	Chattanooga Medical College —R	57	1	2	1	1	3			10	7		4	1	1	2	5	1	1	1	1	141
142	Ft Worth University, Med Dept —R			1	2									1		1						142
143	University of Texas, Dept of Med —R																	1				143
144	Baylor Univ Coll of Med —R			1																		144
145	Physio Medical Coll. of Texas —Ph M																					145
146	Southwestern Univ Med Coll —R		1	1														1			1	146
147	College of Physicians and Surgeons —R*	1		12									1		1	9	1	6			1	147
148	University of Utah, Medical Dept —R																					148
149	University of Vermont, Medical Dept —R						8												12		16	149
150	Medical College of Virginia —R	1		1						2								1				150
151	University College of Medicine —R	1			1			2		1	2						1				1	151
152	University of Virginia, Dept of Med —R	2		2				1	1	2	3		1			1	1			5		152
153	University of West Virginia —R																					153
154	Marquette University, Medical Dept —R				1										3							154
155	Wisconsin Coll of Phys and Surgs —R																					155
156	Univ of Wisconsin, College of Medicine —R												2									156
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

R, Regular, H, Homeopath E, Eclectic; Ph M , Physio Medical; P, Pauopathic.
* Figures for 1906 7 † Figures exact; distribution based on that of 1906 7.

(*Continued from page 585*)

direct written communication certifying to the applicant's professional and moral qualifications, and to the exact work he had done in said college

CURRICULUM

	No of Hours of Lectures	Hours of Laboratory.	Hours of Clinics	Total.
Histology	30	60	.	90
Embryology	30	60	..	90
Osteology	30	.	..	30
Anatomy	190	230	..	420
Physiology	180	120	..	300
Chemistry and Toxicology	100	200	..	300
Materia Medica	40	20	..	60
Pharmacology	40	20	..	60
Therapeutics	90	..	..	90
Bacteriology	40	100	..	140
Pathology	100	140	..	240
Medical Zoology. Postmortem Work and Clinical Microscopy	30	60		90
Physical Diagnosis	20	..	80	100
Practice of Medicine	180	..	360	540
Surgery	180	..	360	540
Obstetrics	100	..	60	160
Gynecology	50	..	110	160
Pediatrics	40	..	60	100
Eye and Ear	30	..	30	60
Nose and Throat	30	..	30	60
Mental and Nervous Diseases	60	..	60	120
Electro Therapeutics	20	..	40	60
Genito Urinary Diseases	30	..	30	60
Dermatology and Syphilis	20	..	20	40
Hygiene and Public Health	30	..	..	30
Dietetics	30	..	..	30
Medical Jurisprudence	30	..	..	30
	1,750	1,010	1,240	4 000

No time credit shall be given to holders of a Bachelor's degree, but subject credit can be given on satisfactory examination Four years of residence in a medical college shall be required of all candidates for the degree of doctor of medicine

Medical Education—Candidates for the degree of Doctor of Medicine shall have attended four courses of study in four calendar years each annual course to have been of not less than thirty teaching weeks' duration, and at least ten months shall intervene

Number.	21 Michigan........ 493	22 Minnesota........ 371	23 Mississippi 603	24 Missouri........ 919	25 Montana 43	26 Nebraska........ 332	27 New Hampshire. 119	28 New Jersey...... 453	29 New Mexico..... 11	30 New York......2,116	31 Nevada.......... 8	32 North Carolina.. 502	33 North Dakota... 76	34 Ohio............ 912	35 Oklahoma....... 152	36 Oregon 131	37 Pennsylvania.. 2,104	38 Rhode Island.... 99	39 South Carolina.. 343	40 South Dakota,... 71	41 Tennessee....... 677	42 Texas........... 874	43 Utah............ 99	44 Vermont 106	45 Virginia......... 521	46 Washington 103	47 West Virginia... 292	48 Wisconsin 478	49 Wyoming 6	50 Foreign.......... 539	51 P. I., Ha., P.R. 23	52 Total.......... 22,602	Number.
93							1			168							1							2						1		180	93
94		3	3	3	1		2	41		134	1	1	1	5		3	5	3	3		1	1	1			2	1	3		9		322	94
95					2		1	28		215				2		1	4	2				2				1				2		316	95
96								5		50																						56	96
97							1	26		299				2			1	1						1						2		337	97
98								17		50							4					1		1						3		80	98
99	1							2		10							1													5		20	99
100	1		1	2			1	69		379				3			1	4			1			1	1					8		503	100
101								1		27							1															30	101
102								1		137				1			4													1	3	150	102
103										166							7					1								2		176	103
104			5	1			1			2		47			1		5		14		1	5			22					6		146	104
105												35							4													40	105
106												76							6													82	106
107										4		103					2		1						2					1		114	107
108		2			1								16																			20	108
109		1							1	4				72			8			1							1					104	109
110	1				1		1							82			1				1									2		90	110
111	1							1		3				26			10													1		42	111
112				2				3						32			9				1					1	15					91	112
113							1			1				83									1				1			6		117	113
114														10			2															15	114
115														61													1					70	115
116													1	193			8													2		209	116
117	4													21			1													1		29	117
118															21																	21	118
119															8																	8	119
120	1																															88	120
121																																35	121
122								4		1				1			106													16		134	122
123	1	5	2	3		1	3	36		17		8		17		1	372	2	3		3	11	4	1	5	5	4	4		32		604	123
124			1	1				25		8				6			98											1		5		168	124
125	4	3	1	2	1	4	4	45		17		25	2	17	2	7	409	5	1	1	2	2	18	2	5	7	9	3		12		693	125
126	3			1		2		7		10				4		2	59	1	3		1				2	1				22		138	126
127	1	1						31	1	7			1	1			321						5			1		1		28		419	127
128								1		4				19			321										12				1	362	128
129								1											141		1				1							153	129
130																				3												3	130
131			1								1	13				1		1	1		49	2			5		2					83	131
132																					23											23	132
133			43	1				1		5		9			4		1		9		94	14			3		2			2		302	133
134	1		14	4		1						1			3				7		71	21				1				1		207	134
135			6	1				1				6			1		1		2		70	9										137	135
136			33	18				1				8		2	3		1		18		49	31			3		1			9		285	136
137			130	2	1									1	6						52	42										386	137
138			31																		25	3										69	138
139			1					1				2					2		1		14	1								1		35	139
140			13									2			1		2		2		12	15			3					1		99	140
141	7		7	2	1			1	1	7		12		6	2	1	11	1	3	2	70	2	1		12	2	6	3		3		262	141
142				1										1	8							92								1		108	142
143																						197										198	143
144															2						1	58										62	144
145																						38										38	145
146															1							58										63	146
147									1	1					19						2	44			3	1						103	147
148																							27							1		28	148
149							20	1		15				1			1	2						63						3		142	149
150								1		1		21							9		1	1			161		14			1		215	150
151								4				28									1				107		7			1	1	158	151
152			4							2		7				1	3	1	2		2	1			60		2	1		1		10[illegible]	152
153																											22				2	24	153
154	6	2				1		1		1			1							1					1			126		3		147	154
155		1																										57				58	155
156																						1				1		22				26	156
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	

between the beginning of any course and the beginning of the preceding course. No time credit shall be given to holders of a Bachelor's degree, but subject credit may be given on satisfactory examination. Four years of residence in a medical college shall be required of all candidates for the degree of doctor of medicine.

The entire course of four years shall consist of at least 4,000 hours, divided into the subjects as shown in the opposite table, and no college shall be recognized that falls below this standard over 20 per cent. in any one branch or over 10 per cent. in the total. Laboratory or clinic hours may be substituted for didactic hours.

Each student shall be obliged to attend 80 per cent. of the exercises in every annual course of study for which he seeks credit. No student shall be given credit on examination unless he attains a grade of at least 70 per cent., or its equivalent, in any other marking system. And no student shall be graduated unless he shall have attained a passing grade in each and all subjects of the required curriculum.

A college which gives less than a four years' course of study, but does not graduate students, and is possessed of other required qualifications, may be admitted to membership.

Each medical college in membership in the Association shall print in every annual catalogue or announcement a table of the total number of hours work given in said college, arranged both by subjects and years.

College of Medicine University of Southern California, Los Angeles, Cal.; Cooper Medical College, San Francisco, Cal.; University of California Medical Department, Berkeley and San Francisco, Cal.; Colorado School of Medicine, University of Colorado, Boulder, Colo.; Denver and Gross College of Medicine, Medical Department of the University of Denver, Denver, Colo.; George Washington University Department of Medicine, Washington, D. C.; Georgetown University School of Medicine, Washington, D. C.; Howard University Medical Department, Washington, D. C.; American Medical Missionary College, Battle Creek, Mich., and Chicago, Ill.; College of Medicine of the University of Illinois (College of Physicians and Surgeons), Chicago, Ill.; University of Indiana School of Medicine, Bloomington and Indianapolis, Ind.; Drake University College of Medicine, Des Moines, Iowa; College of Medicine University of Iowa, Iowa City, Iowa; Kansas Medical College, Medical Department of Washburne College, Topeka, Kan.; School of Medicine, University of Kansas, Lawrence, Kan.; Kentucky School of Medicine, Louisville, Ky.; Louisville and Hospital Medical College, Louisville, Ky.; University of Louisville, Medical Department, Louisville, Ky.; Baltimore Medical College, Baltimore, Md.; College of Physicians and Surgeons, Baltimore, Md.; Johns Hopkins University, Medical Department, Baltimore, Md.; University of Maryland School of Medicine, Baltimore, Md.; Woman's Medical College, Baltimore, Md.; Detroit College of Medicine, Detroit, Mich.; University of Michigan, Department of Medicine and Surgery, Ann Arbor, Mich.; Medical Department University of Mississippi, Oxford, Miss.; University of Missouri Department of Medi-

(*Continued on page 603.*)

Number	NAME OF COLLEGE.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Number.
		Alabama 633	Arizona....... 15	Arkansas....... 419	California....... 403	Colorado....... 156	Connecticut....... 273	Delaware....... 53	Dist. Columbia. 122	Florida....... 132	Georgia 655	Idaho 24	Illinois....... 1,749	Indiana....... 711	Iowa....... 724	Kansas 468	Kentucky....... 630	Louisiana....... 193	Maine....... 182	Maryland....... 347	Massachusetts... 860	
93	Albany Medical College.—R							1													6	93
94	College of Physicians and Surgeons.—R	5			3		10				2		5	1	2	1	3		5		8	94
95	Cornell Universit						6						2	1			2	1	5		7	95
96	Eclectic Medical						1															96
97	Long Island Coll						2													1	1	97
98	New York Homeo						1												1			98
99	N. Y. Med Coll and Hosp for Women —H																				1	99
100	Univ and Bellevue Hosp Med Coll —R				3	2	11			1			2	1	1		1		1	1	7	100
101	Fordham Univ School of Med —R						1															101
102	Syracuse Univ Coll of Med —R						1									1					1	102
103	University of Buffalo, Medical Dept —R																					103
104	Leonard Medical School —R	11		1					2	8	9							1		2		104
105	Wake Forest School of Medicine —R									1												105
106	North Carolina Medical College —R																					106
107	Univ. of North Carolina, Med Dept R									1												107
108	Univ of North Dakota, Med. Dept R												1									108
109	Western Reserve Univ. Med Coll —R													10	2	2					2	109
110	Cleveland Coll of Phys and Surgs R					1																110
111	Cleveland Homeopathic Med Coll —H				1																	111
112	Eclectic Medical Institute —E			1		2					2		6	8	1	1	7					112
113	Medical College of Ohio —R		1											6			16				1	113
114	Pulte Medical College —H																2		1			114
115	Miami Medical College —R												1	2			5					115
116	Starling Ohio Medical College —R												1	1	1						2	116
117	Toledo Medical College —R													1	1							117
118	College of Medicine, Epworth Univ R																					118
119	School of Med , Univ. of Oklahoma —R																					119
120	University of Oregon, Medical Dept R				1							2	1		1							120
121	Willamette Univ , Medical Dept – R				1																	121
122	Temple Coll of Phila , Dept of Med —R				1		2	2					1									122
123	Univ of Pennsylvania, Dept of Med —R	4		3	3	1	4	6		1	5	1	4	5	5	5	1	1	1	2	12	123
124	Hahnemann Med Coll and Hosp —H				1		3	3					2		3	1	3		2	3	2	124
125	Jefferson Medical College —R	5	1	4	7		13	9	1		10		8	3	3	4	4	1	1		9	125
126	Woman's M C. of Pennsylvania —R			1	3			2	4		1					1	2		3		3	126
127	Medico-Chirur Coll of Philadelphia —R				1		4	6				1		2			1	1		2	2	127
128	Western Pennsylvania Med Coll —R				1										1	2						128
129	Med. Coll of State of South Carolina R									8	1											129
130	Univ. of South Dakota, Coll of Medicine R																					130
131	Tennessee Medical College —R										2		1				4					131
132	Knoxville Medical College —R																					132
133	University of Nashville, Med Dept – R	19		12						8	3		5				10	17				133
134	Vanderbilt University, Med Dept —R	16		5	2						6		4	1			19	9				134
135	University of Tennessee, Med Dept —R	15		2	2					1	1		3		1		7	8				135
136	Meharry Medical College —R	21		13		1				6	20		7	2	2	4	8	11				136
137	Memphis Hospital Medical			53						1	2						2	50				137
138	Memphis Coll of Phys and			6							3							1				138
139	Univ of West Tennessee, M			5							1							5				139
140	University of the South —R	20		4						2	9			1			2	10				140
141	Chattanooga Medical College —R	57	1	2	1	1	3			10	7		4	1	1	2	5	1	1	1	1	141
142	Ft Worth University, Med Dept —R			1	2									1		1						142
143	University of Texas, Dept of Med —R																	1				143
144	Baylor Univ Coll. of Med —R			1																		144
145	Physio Medical Coll of Texas —Ph M																					145
146			1	1														1			1	146
147	—R*	1		12									1		1	9	1	6			1	147
148	R																					148
149	pt —R						8												12		16	149
150		1		1						2								1				150
151		1			1			2		1	2						1				1	151
152	d —R	2		2				1	1	2	3		1			1	1			5		152
153																						153
154	—R				1										3							154
155	—R																					155
156	icine R												2									156
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

R, Regular; H, Homeopath E, Eclectic; Ph M , Physio Medical; P, Panpathic.
* Figures for 1906 7 † Figures exact: distribution based on that of 1906 7.

(*Continued from page 585*)

direct written communication certifying to the applicant's professional and moral qualifications, and to the exact work he had done in said college

CURRICULUM

	No of Hours of Lectures	Hours of Laboratory.	Hours of Clinics	Total.
Histology	30	60		90
Embryology	30	60	..	90
Osteology	30	.	..	30
Anatomy	190	230	..	420
Physiology	180	120	..	300
Chemistry and Toxicology	100	200	..	300
Materia Medica	40	20	..	60
Pharmacology	40	20	..	60
Therapeutics	90	..	..	90
Bacteriology	40	100	..	140
Pathology	100	140	..	240
Medical Zoology. Postmortem Work and Clinical Microscopy	30	60	.	90
Physical Diagnosis	20	..	80	100
Practice of Medicine	180	..	360	540
Surgery	180	..	360	540
Obstetrics	100	..	60	160
Gynecology	50	..	110	160
Pediatrics	40	..	60	100
Eye and Ear	30	..	30	60
Nose and Throat	30	..	30	60
Mental and Nervous Diseases	60	..	60	120
Electro Therapeutics	20	..	40	60
Genito-Urinary Diseases	30	..	30	60
Dermatology and Syphilis	20	..	20	40
Hygiene and Public Health	30	..	..	30
Dietetics	30	..	..	30
Medical Jurisprudence	30	..	..	30
	1,750	1,010	1,240	4,000

No time credit shall be given to holders of a Bachelor's degree, but subject credit can be given on satisfactory examination Four years of residence in a medical college shall be required of all candidates for the degree of doctor of medicine

Medical Education—Candidates for the degree of Doctor of Medicine shall have attended four courses of study in four calendar years each annual course to have been of not less than thirty teaching weeks' duration, and at least ten months shall intervene

	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	
Number.	Michigan........ 193	Minnesota....... 371	Mississippi 603	Missouri......... 919	Montana 43	Nebraska....... 332	New Hampshire. 119	New Jersey...... 452	New Mexico..... 11	New York......2,116	Nevada........ 8	North Carolina.. 502	North Dakota... 76	Ohio.............. 912	Oklahoma....... 152	Oregon 131	Pennsylvania.. 2,104	Rhode Island.... 93	South Carolina.. 343	South Dakota.... 71	Tennessee....... 677	Texas............ 874	Utah............. 99	Vermont 106	Virginia......... 521	Washington 103	West Virginia... 292	Wisconsin 478	Wyoming 6	Foreign.......... 539	P. I., Ha., P.R. 23	Total......... 22,602	Number.
93							1			168							1							2						1		180	93
94		3	3	3	1		2	41		181	1	1	1	5		3	5	3	3		1	1	1			2	1	3		9		322	94
95					2		1	28		245				2		1	4	2				2				1				2		316	95
96								5		50																						56	96
97							1	26		299				2			1	1						1						2		337	97
98								17		50							4					1		1						3		80	98
99	1							2		10							1													5		20	99
100	1		1	2			1	69		379				3			1	4			1			1	1					8		503	100
101								1		27							1															30	101
102								1		137				1			4													1	3	150	102
103										106							7					1								2		176	103
104			5	1			1			2		47			1		5		14		1	5			22					6		146	104
105												35							4													40	105
106												76							6													82	106
107										4		103					2		1						2					1		114	107
108		2			1								16																			20	108
109		1							1	4				72			8			1							1					104	109
110	1				1		1							82			1				1									2		90	110
111	1							1		3				26			10													1		42	111
112				2				3						32			9				1					1	15					91	112
113							1			1				83									1				1			6		117	113
114														10			2															15	114
115														61													1					70	115
116													1	103			8													2		209	116
117	4													21			1													1		29	117
118															21																	21	118
119															8																	8	119
120	1															59	1									20				2		88	120
121																30										2				2		35	121
122								4		1				1			106													16		134	122
123	1	5	2	3		1	3	36		17		8		17		1	372	2	3		3	11	4	1	5	5	4	4		32		604	123
124			1	1				25		8				6			98											1		5		168	124
125	4	3	1	2	1	4	4	45		17		25	2	17	2	7	409	5	1	1	2	2	18	2	5	7	9	3		12		693	125
126	3			1		2		7		10				4		2	59	1	3		1				2	1				22		138	126
127	1	1						31	1	7			1	1			321						5			1		1		28		419	127
128								1		4				19			321										12				1	362	128
129								1											141		1				1							153	129
130																				3												3	130
131			1								1	13				1		1	1		49	2			5		2					83	131
132																					23											23	132
133			43	1				1		5		9			4		1		9		94	14			3		2			2		302	133
134	1		14	4		1						1			3				7		71	21				1				1		207	134
135			6	1				1				6			1		1		2		70	9										137	135
136			33	18				1				8		2	3		1		18		49	31			3		1			9		285	136
137			130	2	1									1	6						52	42										386	137
138			31																		25	3										69	138
139			1					1				2					2		1		14	1								1		35	139
140			13									2			1		2		2		12	15			3					1		99	140
141	7		7	2	1			1	1	7		12		6	2	1	11	1	3	2	70	2	1		12	2	6	3		3		262	141
142				1										1	8							92								1		108	142
143																						197										198	143
144															2						1	58										62	144
145																						38										38	145
146															1							58										63	146
147									1	1					19						2	44			3	1						103	147
148																							27							1		28	148
149							20	1		15				1			1	2						63						3		142	149
150								1		1		21							9		1	1			161		14			1		215	150
151								4				28									1				107		7			1	1	158	151
152			4							2		7				1	3	1	2		2	1			60		2	1		1		106	152
153																											22				2	24	153
154	6	2				1		1		1			1							1					1			126		3		147	154
155		1																										57				58	155
156																						1				1		22				26	156
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	

between the beginning of any course and the beginning of the preceding course. No time credit shall be given to holders of a Bachelor's degree, but subject credit may be given on satisfactory examination. Four years of residence in a medical college shall be required of all candidates for the degree of doctor of medicine.

The entire course of four years shall consist of at least 4,000 hours, divided into the subjects as shown in the opposite table, and no college shall be recognized that falls below this standard over 20 per cent. in any one branch or over 10 per cent. in the total. Laboratory or clinic hours may be substituted for didactic hours.

Each student shall be obliged to attend 80 per cent. of the exercises in every annual course of study for which he seeks credit. No student shall be given credit on examination unless he attains a grade of at least 70 per cent., or its equivalent, in any other marking system. And no student shall be graduated unless he shall have attained a passing grade in each and all subjects of the required curriculum.

A college which gives less than a four years' course of study, but does not graduate students, and is possessed of other required qualifications, may be admitted to membership.

Each medical college in membership in the Association shall print in every annual catalogue or announcement a table of the total number of hours work given in said college, arranged both by subjects and years.

Colleges of Medicine University of Southern California, Los Angeles, Cal.; Cooper Medical College, San Francisco, Cal.; University of California Medical Department, Berkeley and San Francisco, Cal.; Colorado School of Medicine, University of Colorado, Boulder, Colo.; Denver and Gross College of Medicine, Medical
Departme [illegible] Denver, Denver, Colo.; George
Washingt [illegible] of Medicine, Washington, D. C.;
Georgeto [illegible] Medicine, Washington, D. C.;
Howard [illegible] ment, Washington, D. C.; Ameri-
can Medi [illegible] attle Creek, Mich., and Chicago.
Ill.; Coll [illegible] niversity of Illinois (College of
Physicia [illegible] iversity of Indiana
School c [illegible] apolis, Ind.; Drake
Universit [illegible] Iowa; College of
Medicine [illegible] a; Kansas Medical
College, [illegible] lege, Topeka, Kan.;
School o [illegible] wrence, Kan.; Ken-
tucky Sc [illegible] isville and Hospital
Medical [illegible]
Departm [illegible]
Md.; College of Physicians and Surgeon [illegible]
Hopkins University, Medical Department [illegible]
sity of Maryland School o [illegible]
Medical College, Baltimore, [illegible]
troit, Mich.; University of [illegible] of Medicine and Surgery, Ann Arbor, Mich.; Medical Department University of Mississippi, Oxford, Miss.; University of Missouri Department of Medi-

(*Continued on page 603.*)

COLLEGES	1901		1902		1903		1904		1905		1906		1907		1908		Totals.		
	Students	Graduates	Students	Graduates.	Students	Graduates.	Students.	Graduates	Students	Graduates	Students	Graduates	Students	Graduates	Students	Graduates	Students	Graduates.	Percentage of Grads.
ALABAMA																			
Birmingham Medical College	77	15	82	8	91	22	101	5	75	16	72	8	113	12	131	16	751	102	13.6
Medical College of Alabama	130	38	136	13	145	12	167	38	170	41	158	29	170	23	169	25	1,245	214	17.2
ARKANSAS																			
University of Arkansas	210	20	220	11	236	12	115	19	220	28	176	26	182	26	177	19	1,566	161	10.3
CALIFORNIA																			
Cooper Medical College	167	27	214	25	212	45	193	44	155	37	176	30	112	29	97	24	1,286	261	20.3
University of California	164	28	151	24	115	26	113	27	104	17	90	19	51	24	36	16	827	181	21.9
California Medical College	19	10	81	6	60	7	47	8	40	8	45	10			8	1	333	50	15.0
Hahnemann Medical College	40	6	45	8	38	12	33	8	31	9	24	4	25	2	23	9	275	58	21.1
Coll. of P. and S., San Francisco	171	18	180	41	146	23	124	29	144	29	145	30	79	16	70	16	1,059	227	21.4
Oakland Coll. of M. and S.					6	0	8	0	12	0	10	4	10	2	10	1	56	7	12.5
Univ. of Southern California	87	19	102	14	106	27	110	24	115	25	127	28	99	27	89	26	835	188	22.5
Coll. of P. and S., Los Angeles									25	6	31	3	34	2	37	10	127	21	16.5
COLORADO																			
Denver and Gross	138	35	133	35	130	33	127	32	115	31	100	26	101	29	79	22	923	243	26.3
Denver Coll. of Phys. and Surg.	40	5	31	10	29	6	32	7	29	6	23	5	12	6	16	6	275	51	18.6
University of Colorado	70	0	63	13	63	8	52	17	51	6	70	10	58	12	52	11	482	92	19.1
CONNECTICUT																			
Yale Medical College	133	18	145	20	115	27	110	23	178	22	131	25	156	29	136	29	1,124	193	17.2
DIST. OF COLUMBIA																			
George Washington Univ.	249	26	257	26	260	34	306	52	298	62	280	51	215	61	198	45	2,063	370	17.4
Georgetown University	123	21	130	13	144	22	110	32	133	32	102	20	82	12	82	27	976	179	19.1
Howard University	142	19	145	27	141	29	155	36	153	21	157	23	186	44	205	24	1,284	229	17.8
GEORGIA																			
College of P. and S., Atlanta	282	67	257	111	200	31	215	31	250	18	180	52	200	37	274	29	1,818	409	22.5
Georgia Eclectic Med. Coll.	55	21	58	21	46	2	54	17	53	11	57	15	71	12	71	23	470	125	26.6
University of Georgia	107	0	121	17	110	7	115	26	103	14	113	40	98	20	113	32	885	206	23.2
Atlanta School of Medicine											220	21	236	20	271	48	727	89	12.2
ILLINOIS																			
American Medical Miss. Coll.	119	13	92	24	88	22	88	21	80	21	80	24	46	10	42	4	635	138	21.7
Bennett Medical College	124	37	104	21	113	18	115	10	103	30	156	52	153	31	150	23	1,018	230	22.6
College of Med. and Surgery	46	9	40	9	76	12	70	11	60	12	40	5	28	2	28	3	378	63	16.7
Coll. of P. and S., Chicago	676	161	692	220	685	216	495	214	654	213	556	210	501	116	463	150	4,922	1,533	31.1
Hahnemann Med. Coll., Chicago	175	51	185	49	195	69	138	49	220	61	178	58	136	12	117	43	1,344	422	31.4
Hering Medical College	60	12	72	13	90	22	92	29	50	11	48	14	80	11	58	16	550	131	23.8
Illinois Medical College	202	36	278	21	265	17	237	58	192	59	192	48	212	40	53	30	1,551	332	21.4
Jenner Medical College	101	13	105	18	107	13	122	24	102	13	250	8	183	19	175	22	1,147	170	14.8
Northwestern University	344	74	465	96	608	127	587	133	593	14	580	125	473	134	533	135	4,183	967	23.1
Rush Medical College	1,055	213	803	211	1,047	220	1,033	160	532	112	450	83	567	83	583	70	6,063	1,152	19.0
National Medical University	144	12	150	11	173	17	234	20	232	21	249	29	250	26	123		1,555	138	9.0
Chicago Coll. of M. and S.			36	0	126	10	262	25	292	31	189	21	239	35	325	70	1,469	192	13.3
INDIANA																			
Indiana Medical College	375	73	427	92	493	103	480	105	438	116	389	122	227	70	197	50	2,996	731	24.4
Physio-Med. of Indiana	31	9	31	1	29	9	32	9	22	5	27	6	24	7	24	5	230	51	21.5
Eclectic Medical Coll. of Indiana	14	0	25		28	5	30	3	45	8	20	6	12	3	12	5	186	30	16.1
Indiana University							18		14		21		109	25	111	21	273	49	17.9
IOWA																			
Drake University	78	14	64	10	66	11	65	13	60	10	81	10	76	17	75	18	565	103	18.2
Keokuk Med. C. of P. and S.	247	51	217	52	243	56	267	47	230	50	170	50	127	30	115	37	1,616	373	22.7
Sioux City College of Medicine	52	5	63	10	72	13	59	12	72	14	72	14	29	10	25	9	445	87	19.6
University of Iowa (H)	59	16	59	7	35	11	35	9	11	9	17	8	14	4	43	9	363	73	20.1
University of Iowa (R)	272	35	248	40	251	35	249	19	277	65	267	51	272	52	266	42	2,102	369	17.6
KANSAS																			
Kansas Medical College	98	0	99	16	101	12	104	24	91	23	90	18	82	14	69	13	734	120	16.3
University of Kansas	365	100	271	61	283	53	310	65	241	53	162	57	115	29	101	18	1,853	436	23.5
Eclectic Medical University	48	14	49	12	61	15	60	16	56	17	46	16	26	9	41	11	397	110	27.7
KENTUCKY																			
Kentucky School of Medicine	309	43	295	45	290	56	275	58	193	49	275	48	270	66	270	44	2,177	409	18.8
Louisville Hospital Med. Coll.	530	77	627	94	678	122	469	160	658	132	554	148	436	147	335	102	4,517	983	21.8
Louisville National Med. Coll.	21	4		7	26	4	38	4	37	6	50	7	50	15	36	6	258	51	20.0
Southwestern Homeo. Med. Coll.	33	11	27	4	22	5	21	6	19	6	16	6	11	1	13	2	162	41	25.3
University of Louisville	361	55	418	49	557	91	580	110	588	151	497	129	456	158	351	100	3,788	843	22.2
LOUISIANA																			
Flint Medical College	32	2	47	4	42	5	50	5	55	7	54	8	51	9	31	8	365	48	13.3
Tulane University	390	114	36	53	405	82	438	91	469	83	458	102	516	91	535	102	3,572	718	20.1
MAINE																			
Medical School of Maine	90	40	90	4	100	20	101	22	93	18	82	17	94	16	93	29	743	166	22.3
MARYLAND																			
Baltimore Medical College	507	97	532	93	410	93	409	77	406	96	441	97	481	97	323	82	3,509	732	20.9
College of P. & S., Baltimore	359	59	405	58	315	76	348	83	298	70	298	65	309	75	253	65	2,473	551	22.4
Johns Hopkins Med. School	203	54	229	123	257	49	276	45	291	53	293	84	264	70	281	65	2,100	543	26.0
Atlantic Medical College	32	10	35	9	26	3	39	15	33	9	18	5	22	11	37	22	242	82	33.9
University of Maryland	332	71	366	76	392	96	340	96	340	85	339	83	311	42	316	73	2,736	640	23.4
Woman's Medical College	31	7	25	4	16	2	24	3	36	2	33	2	4	6	28	11	227	37	16.3
Maryland Medical College	75	29	128	39	204	59	223	104	207	93	121	29	125	29	100	29	1,186	403	33.9
MASSACHUSETTS																			
Boston University	127	24	125	23	127	36	99	27	83	11	100	23	96	13	102	19	859	179	20.8
College of P. and S., Boston	127	9	171	9	117	19	117	27	168	25	134	20	123	26	162	26	1,079	164	15.2
Harvard University	591	116	496	167	432	114	364	135	307	47	292	61	366	44	298	70	3,146	800	25.4
Tufts Medical College	277	35	355	35	349	35	394	50	385	62	375	73	316	57	371	55	2,862	403	14.1
MICHIGAN																			
Detroit College of Medicine	224	45	242	48	257	62	260	72	208	51	173	52	155	68	146	30	1,668	461	27.6
Detroit Homeo. Med. College	41	4	45	6	52	14	50	8	44	12	33	15	29	9	22	6	316	74	23.4
University of Michigan (R)	533	75	508	84	455	92	418	101	376	41	369	79	371	52	390	72	3,450	607	17.6
University of Michigan (H)	67	16	55	8	76	13	69	21	66	12	82	14	82	15	82	15	579	117	20.2
MINNESOTA																			
University of Minnesota (R)	323	60	362	61	315	70	266	68	225	71	189	[illegible]	188	37	165	32	2,037	442	21.7
University of Minnesota (H)	26	4	21	3	18	6	18	4	16	1	15	1	11	6	6	3	134	31	23.1
Hamline University	131	25	130	34	123	34	86	16	125	10	120	27	100	18	126	34	957	195	20.7

TABLE 3. STUDENTS AND GRADUATES FOR EIGHT YEARS

COLLEGES.	1901		1902		1903		1904		1905		1906		1907		1908		Totals.		
	Students.	Graduates.	Students.	Graduates.	Students.	Graduates.	Students.	Graduates.	Students.	Graduates.	Students.	Graduates.	Students.	Graduates.	Students.	Graduates.	Students.	Graduates.	Percentage of Grads.
MISSOURI.																			
Univ. Med. Coll., Kansas City	216	69	225	27	222	63	234	67	220	58	235	54	238	57	192	61	1,812	459	25.3
Kansas City Hahnemann M. C.	.....	.....	72	10	71	17	52	17	32	10	76	21	74	11	62	15	439	101	23.0
Ensworth Medical College	63	8	80	14	110	14	94	19	90	22	149	34	117	26	91	25	794	162	20.4
Barnes Medical College	5.0	111	501	78	495	100	485	125	427	109	385	72	352	79	323	78	3,488	752	21.3
St. Louis University	306	87	488	55	391	88	407	93	385	103	295	115	268	56	241	68	2,841	665	23.4
Coll. of P. and S., St. Louis	243	52	280	50	270	62	250	47	275	29	278	53	270	44	164	49	2,030	386	19.0
American Medical College	75	16	69	14	78	18	76	12	66	16	63	22	38	9	41	8	506	115	22.7
Homeopathic College of Missouri	66	11	67	12	63	13	57	10	45	7	46	4	44	11	27	9	418	77	18.4
Washington University	227	54	242	43	281	53	279	63	251	62	239	55	215	50	208	59	1,945	439	22.6
University of Missouri	85	11	90	.....	93	12	83	10	103	8	98	8	66	2	65	8	693	59	8.5
NEBRASKA.																			
University of Nebraska	149	23	153	38	138	38	150	30	92	28	142	7	82	16	98	24	1,004	204	20.3
Creighton Medical College	123	27	151	37	142	29	153	27	167	33	172	39	167	35	158	41	1,233	268	21.7
Lincoln Medical College	74	12	98	21	86	16	83	22	81	15	71	15	50	12	50	18	593	131	22.1
NEW HAMPSHIRE.																			
Dartmouth Medical College	89	27	72	15	65	14	68	13	60	12	59	10	62	11	58	9	533	111	20.8
NEW YORK.																			
Albany Medical College	142	28	154	26	165	33	173	41	172	52	165	33	195	40	180	40	1,346	293	21.8
Coll. of P. and S., New York	801	149	778	145	795	163	691	174	563	185	450	152	387	93	322	81	4,792	1,147	23.9
Cornell University	356	26	415	53	391	60	360	55	392	74	379	59	342	72	316	58	2,954	457	15.5
Eclectic Med. Coll., New York	84	12	100	7	104	13	95	8	99	13	105	15	83	11	56	7	726	86	11.8
Long Island College Hospital	187	41	245	31	290	40	389	47	414	73	343	72	342	87	337	89	2,547	480	18.9
New York Homeo. Med. Coll	107	27	103	23	111	29	118	28	110	21	110	30	109	22	80	18	851	198	23.3
N. Y. Woman's Med. Coll	33	9	36	6	34	8	33	5	34	9	20	6	24	4	20	3	234	50	21.4
University and Bellevue M. C.	235	43	319	48	311	73	342	61	391	47	481	53	502	63	503	88	3,134	481	15.3
Syracuse University	116	19	128	19	140	20	131	31	154	31	153	23	153	24	150	43	1,125	219	19.5
University of Buffalo	212	46	239	38	237	45	243	54	231	37	225	44	214	59	176	37	1,777	360	20.3
NORTH CAROLINA.																			
Leonard Medical College	8	1	106	21	113	23	125	21	136	21	147	33	149	24	146	43	930	187	20.1
North Carolina Med. College	42	8	55	18	67	10	84	17	81	26	92	24	69	14	82	6	572	123	21.5
University of North Carolina	.....	.....	62	.....	83	4	72	4	100	9	96	11	114	10	111	12	641	50	7.8
OHIO.																			
Western Reserve University	133	24	126	36	97	26	88	31	73	19	85	12	87	10	104	30	793	188	23.7
Cleveland Coll. of P. and S.	78	15	86	30	86	22	75	19	84	16	88	22	92	13	90	20	679	157	23.1
Cleveland Homeo. Med. Coll	150	46	112	23	115	40	85	25	66	24	50	14	43	10	43	10	664	192	29.0
Eclectic Medical Institute	141	26	142	36	146	45	142	27	135	37	116	35	97	31	91	23	1,010	260	25.7
Medical College of Ohio	200	60	180	47	170	54	145	46	121	33	137	33	133	35	117	26	1,203	334	27.8
Pulte Medical College	39	5	40	10	30	10	22	7	18	5	13	3	15	5	15	1	192	46	24.0
Miami Medical College	112	25	97	31	106	40	103	27	85	22	78	24	75	15	70	16	726	201	27.7
Starling-Ohio Medical College	401	77	394	93	377	107	292	74	163	67	228	72	197	39	209	30	2,261	559	24.7
Toledo Medical College	55	8	52	10	41	14	33	7	33	7	20	9	20	8	29	3	283	66	23.3
OREGON.																			
University of Oregon	64	11	80	20	88	10	96	16	102	26	82	16	86	20	88	20	686	139	20.3
Willamette University	27	5	27	5	40	7	42	8	50	7	50	15	45	16	35	10	316	73	23.1
PENNSYLVANIA.																			
Temple College	.....	.....	35	0	70	0	63	2	87	2	101	14	90	16	134	8	580	42	7.2
University of Pennsylvania	565	160	542	151	469	111	472	96	546	116	577	103	538	114	604	118	4,363	969	22.2
Hahn. M. C. of Philadelphia	261	52	269	58	233	69	201	66	164	44	186	52	183	48	168	37	1,673	426	25.4
Jefferson Medical College	736	103	724	140	771	166	732	165	676	179	617	200	629	126	693	126	5,573	1,203	21.7
Woman's M. C., Pennsylvania	175	37	157	28	165	30	159	43	151	42	136	25	152	29	138	32	1,233	266	21.6
Medico-Chirurgical Coll., Pa	403	67	447	23	431	93	414	70	461	86	467	84	434	75	419	66	3,481	564	16.2
Western Pennsylvania M. C.	338	73	327	57	317	79	259	51	281	53	307	46	346	48	362	53	2,537	460	18.1
SOUTH CAROLINA.																			
Med. Coll. of South Carolina	95	32	89	4	95	21	91	23	87	28	99	6	130	21	153	17	839	152	18.1
[illegible]																			
[illegible]	97	35	79	23	62	8	86	10	92	13	82	19	80	16	83	17	661	141	21.3
[illegible]	34	4	37	3	23	6	30	8	47	6	45	4	32	1	23	4	271	36	13.3
[illegible]	182	66	257	34	317	50	301	41	317	75	298	42	414	86	302	67	2,388	461	19.3
[illegible]	211	92	160	16	162	34	168	34	158	35	197	36	215	42	207	40	1,478	329	22.2
[illegible]	182	75	162	18	150	33	154	30	161	44	182	25	167	41	137	40	1,298	306	23.6
[illegible]	217	39	233	55	252	41	287	57	328	59	321	68	300	73	285	78	2,223	470	21.1
[illegible]	750	189	687	171	675	195	566	153	476	51	492	82	388	66	386	83	4,420	990	22.4
University of [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	203	38	148	24	132	36	119	28	150	39	99	31	1,287	379	29.4
Chattanooga "	[illegible]	[illegible]	[illegible]	[illegible]	264	41	252	37	263	39	267	33	249	36	262	25	2,038	306	15.0
University of [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	17	0	27	3	33	6	40	4	23	3	35	9	175	25	14.3
TEXAS.																			
Fort Worth University	157	27	141	17	108	5	106	9	191	21	192	24	176	19	108	9	1,179	131	11.1
University of Texas	119	6	167	13	179	35	172	23	168	23	189	31	188	27	198	25	1,380	183	13.3
Baylor University	81	15	98	19	66	3	68	14	132	36	70	8	57	6	62	11	634	112	16.9
Physio-Medical College of Texas	.....	.....	20	3	20	3	21	0	42	5	47	11	44	2	38	4	232	23	12.1
Southwestern University	.....	.....	.....	.....	.....	.....	38	11	48	14	85	4	68	9	63	9	302	47	15.5
Coll. of P. and S., Dallas	.....	.....	.....	.....	.....	.....	72	14	72	14	95	18	103	23	.....	.....	342	69	20.2
VERMONT.																			
University of Vermont	155	15	210	32	246	31	225	55	185	48	170	47	165	34	142	33	1,498	295	19.7
VIRGINIA.																			
Medical College of Virginia	203	47	212	13	219	35	219	41	209	38	242	45	212	29	215	38	1,731	286	15.5
Univ. College of Medicine	224	72	194	8	187	44	188	25	223	48	205	20	182	43	158	43	1,561	303	19.4
University of Virginia	173	53	211	63	161	25	164	81	145	41	122	21	134	31	106	24	1,206	279	23.1
WISCONSIN.																			
Milwaukee Medical College	178	36	184	28	184	43	148	22	174	38	139	15	130	27	147	43	1,284	252	19.6
Coll. of P. and S., Wisconsin	123	18	125	19	102	23	86	29	74	19	86	15	62	21	58	9	716	153	21.[illegible]
Miscellaneous Colleges	1,258	264	1,532	91	1,097	222	2,076	189	1,023	155	838	98	880	159	727	72	9,431	1,250	13.[illegible]
Total Students		26,417		27,501		27,615		28,142		26,147		25,204		24,276		22,603		207,904	
Total Graduates		5,444		4,999		5,698		5,747		5,606		5,364		4,980		4,741		42,579	
Percentage of Graduates		20.6		18.2		20.6		20.4		21.1		21.3		20.5		21.0		20.4	

I. COLLEGES NOW EXISTING.

The dates here given refer to the colleges as they exist under their present titles. Some were organized originally under other names, to which reference is made in the fourth column.

Number.	NAME AND LOCATION OF COLLEGE.	Year Organized.	First Class Graduated.	Years When No Classes Graduated.	Previous Titles.	Dean, or Secretary.	1908-9 Session. Begins. 1908.	1908-9 Session. Ends. 1909.	Number.
	ALABAMA.								
1	Birmingham Medical College, Birmingham.........	1894	1895	....	....	B. L. Wyman, M.D.......	Oct. 5	April 19	1
2	Medical Department of the University of Alabama, Mobile	1907	1908	....	See II-2...	Rhett Goode, M.D..........	Oct. 1	May 1	2
	ARKANSAS								
3	and Surgeons, Little Rock..	1906	1907	....	....	J. P. Runyan, M.D.......	Oct. 1	April 30	3
4	sas, Medical Department, ...	1899	1900	....	See II-5...	James H. Lenow, M.D....	Oct. 1	May 1	4
	CALIFORNIA.								
5	California Eclectic Medical College, Los Angeles..	1907	1908	....	See II-9...	J. A. Munk, M.D	Sept. 14	May 21	5
6	College of Physicians and Surgeons, Los Angeles.	1903	1905	....	....	Charles W. Bryson, M.D..	Sept. 26	June 24	6
7	College of Physicians and Surgeons, San Francisco	1896	1897	....	....	D. A. Hodghead, M.D.....	Sept. 14	May 1	7
8	Cooper Medical College, San Francisco............	1882	1883	....	See II-15..	Henry Gibbons, Jr., M.D.	Aug. 15	May 6	8
9	Hahnemann Medical College of the Pacific, Homeopathic, San Francisco..........	1902	1903	....	See II-11..	James W. Ward, M.D.....	Sept. 9	May 27	9
10	*Oakland College of Medicine and Surgery, Oakland*	1900	1906	....	....	*Edward N. Ewer, M.D....*	Aug. 17	May 17	10
11	University of California Medical Department, San Francisco	1872	1873	....	See II-11..	A. A. D'Ancona, M.D.....	Aug. 17	May 12	11
12	University of Southern California, College of Medicine, Los Angeles..........	1885	1888	....	....	W. Jarvis Barlow, M.D...	Oct. 1	June 11	12
	COLORADO.								
13	Denver and Gross College of Medicine, Denver....	1902	1902	....	See II-18..	Walter A. Jayne, M.D....	Sept. 8	May 13	13
14	Denver College of Physicians and Surgeons, Denver	1903	1903	....	See II-21..	Joseph B. Kinley, M.D....	Sept. 7	May 13	14
15	University of Colorado, Medical Department, (Colorado School of Medicine), Boulder.........	1883	1885	1898-1899	....	William P. Harlow, M.D.	Sept. 14	June 4	15
	CONNECTICUT.								
16	Yale Medical School, New Haven	1884	.. ...	....	See II-22..	Herbert E. Smith, M.D...	Sept. 24	June 25	16
	BIA.								
17	University Department of	1904	1905	....	See II-23..	W. F. R. Phillips, M.D..	Sept. 30	June 9	17
18	School of Medicine, Washington	1851	1852	....	....	George M Kober, M.D...	Sept. 27	June 11	18
19	Howard University Medical Department, Washington	1868	1871	....	....	Robert Reyburn, M.D.....	Oct. 1	May 23	19
	GEORGIA.								
20	Atlanta College of Physicians and Surgeons, Atlanta	1898	1899	....	See II-29 .	W. S. Elkin, M.D..........	Sept. 28	May 1	20
21	Atlanta School of Medicine, Atlanta............	1905	1906	....	....	George H. Noble, M.D....	Sept. 25	April 23	21
22	Georgia College of Eclectic Medicine and Surgery, Atlanta	1886	1887	....	....	Elzie B. Thomas, M.D....	Oct. 1	April 1	22
23	Medical College of Georgia, Augusta............	1829	1833	1861	....	Joseph Eve Allen, M.D....	Oct. 1	May 1	23
	ILLINOIS.								
24	American Medical Missionary College, Battle Creek, Mich., and Chicago..........	1895	1899	....	....	J. H. Kellogg, M.D.......	Sept. 15	June 15	24
25	Bennett College of Eclectic Medicine and Surgery, Chicago	1868	1870	....	....	John D. Robertson, M.D..	Sept. 22	May 21	25
26	Chicago College of Medicine and Surgery, Chicago, (No. 2)[1]	1907	1908	....	See II-41..	Henry S. Tucker, M.D....	Sept. 29	May 18	26
27	College of Medicine and Surgery, Physio-Medical, Chicago	1899	1900	....	See II-53..	N. LaDolt Johnson, M.D.	Sept. 23	May 15	27
28	College of	1882	1883	....	....	William E. Quine, M.D...	Sept. 28	June 8	28
29	Hahneman cago	1859	1861	....	....	W. Henry Wilson, M.D...	Sept. 21	May 15	29
30	Hering	1892	1893	....	....	H. C. Allen, M.D..........	Sept. 30	May 30	30
31	Illinois	1894	1895	....	....	B. B.	Sept. 9	April 29	31
32	Jenner	1892	1896	....	....	John		June 25	32
33	National Medical University, Chicago[2]............	1900	1900	....	See II-76..	L. D.		....	33
34	ity Medical School, Chicago	1891	1892	....	See II-51 .	Charl		June 15	34
35	ge, Chicago[2]............	1907	.....	....	....	J. F. Burkholder, M.D....	Sept. 3	June 27	35
36	Chicago............	1843	1844	.. ..	....	John M. Dodson, M.D.....	Oct. 1	June 11	36
	INDIANA.								
37	Indiana University School of Medicine, Bloomington and Indianapolis..........	1890	1908	....	....	B. D. Myers, M.D.........	Sept. 22	June 25	37
38	Physio-Medical College of Indiana, Indianapolis..	1873	1874	....	....	C. T. Bedford, M.D........	Sept. 8	May 4	38
	IOWA.								
39	Drake University College of Medicine, Des Moines	1903	1904	....	See II-110.	D. S. Fairchild, M.D......	Sept. 14	June 16	39
40	Keokuk Medical College, College of Physicians and Surgeons,	1899	1900	....	See II-109.	G. F. Jenkins, M.D........	Sept. 15	May 25	40
41	Sioux City Colle	1890	1893	....	....	F. E. Franchere, M. D....	Sept. 17	June 7	41
42	State University Iowa	1869	1871	....	....	James R. Guthrie, M.D...	Sept. 16	June 16	42
43	State pathi	1877	1878	....	....	George Royal, M.D........	Sept. 16	June 16	43
	KANSAS.								
44	Kansas Medical College, Topeka............	1890	1892	....	....	Wm. S. Lindsey, M.D.....	Sept. 8	April 28	44
45	University of Kansas, School of Medicine, Kansas City and Lawrence............	1880	1906	....	....	George H. Hoxie, M.D....	Sept. 16	June 9	45
46	Western Eclectic College of Medicine and Surgery, Kansas City	1908	......	....	See II-117.	Theodore Doyle, M.D.....	Sept. 7	April 30	46
	KENTUCKY.								
47	Louisville National Medical College (Colored), Louisville	1888	1889	....	....	E. S. Porter, M.D.........	Oct. 6	May 21	47
48	Southwester	1892	1894	....	....	G. S. Coon, M.D..........	Oct. 6	May 19	48
49	University Louisville	1846	1847	1863	See II-128.	T. C. Evans, M.D.........	Nov. 1	May 31	49

For footnotes to this table see page 602.

Number.	NAME AND LOCATION OF COLLEGE.	Year Organized.	First Class Graduated.	Years When No Classes Graduated.	Previous Titles.	Dean, or Secretary.	1908-9 Session.		Number.
							Begins. 1908.	Ends. 1909.	
	LOUISIANA.								
50	Flint Medical College of New Orleans University, New Orleans	1902	1903	....	See II-132.	A. D. Bush, M.D.	Sept. 28	May 5	50
51	Medical Department of the Tulane University of Louisiana, New Orleans	1884	1885	....	See II-133.	Isadore Dyer, M.D.	Oct. 1	May 19	51
	MAINE.								
52	Medical School of Maine, Brunswick	1820	1820	....	....	Alfred Mitchell, M.D.	Oct. 22	June 23	52
	MARYLAND.								
53	Atlantic Medical College, Baltimore	1907	1908	....	[illegible]	[illegible] M.D.	Oct. 1	June 3	53
54	Baltimore Medical College, Baltimore	1881	1882	....		[illegible]	Sept. 21	May 21	54
55	College of Physicians and Surgeons, Baltimore	1872	1873	....		[illegible] M.D.	Oct. 1	June 1	55
56	Johns Hopkins Medical School, Baltimore	1887	1907	....		[illegible] M.D.	Oct. 6	June 14	56
57	Maryland Medical College, Baltimore	1898	1899	....	....	Harry Gross, M.D.	Oct. 1	June 1	57
58	University of Maryland School of Medicine, Baltimore	1812	1813	....	See II-139.	R. Dorsey Coale, M.D.	Oct. 1	June 1	58
59	Woman's Medical College of Baltimore, Baltimore	1882	1883	....	....	J. R. Abercrombie, M.D.	Oct. 1	May 31	59
	MASSACHUSETTS.								
60	Boston University, School of Medicine, Boston	1873	1874	....	....	John P. Sutherland, M.D.	Oct. 1	June 2	60
61	College of Physicians and Surgeons, Boston	1880	1882	....	....	C. H. Cobb, M.D.	Sept. 18	June 20	61
62	Harvard Medical School, Boston	1782	1783	....	....	William L. Richardson	Oct. 1	June 30	62
63	Tufts College Medical School, Boston	1893	1894	....	....	F. M. Briggs, M.D.	Sept. 30	May 26	63
	MICHIGAN.								
64	Detroit College of Medicine, Detroit	1885	1886	....	See II-155.	F. B. Walker, M.D.	Sept. 16	May 27	64
65	Detroit Homeopathic College, Detroit	1899	1900	....	....	D. A. MacLachlan, M.D.	Sept. 15	May 15	65
66	University of Michigan, Department of Medicine and Surgery, Ann Arbor	1850	1851	....	....	Victor C. Vaughan, M.D.	Sept. 29	June 24	66
67	University of Michigan, Homeopathic College, Ann Arbor	1875	1877	....	....	W. B. Hinsdale, M. D.	Sept. 29	June 24	67
	[illegible].								
68	[illegible], College of Medicine and [illegible]	1883	1889	....	....	F. F. Wesbrook, M.D.	Sept. 15	June 5	68
69	University of Minnesota [illegible] Medicine and Surgery, [illegible]	1888	1889	....	See II-167.	Eugene L. Mann, M.D.	Sept. 15	June 5	69
	MISSISSIPPI.								
70	Mississippi Medical College, Méridian	1906	1907	....	....	T. A. Barber, M.D.	Oct. 1	May 1	70
71	University of Mississippi, Medical Department, Oxford	1903	.....	....	....	W. S. Leathers, M.D.	Sept. 8	June 8	71
	MISSOURI.								
72	American Medical College, St. Louis[3]	1873	1874	....	....	P. C. Clayberg, M.D.	Sept. 16	April 21	72
73	Barnes Medical College, St. Louis[4]	1892	1893	1899	....	C. M. Ament, M.D.	Sept. 7	May 1	73
74	Ensworth Medical College, St. Joseph[5]	1888	1889	1906–1907	See II-173.	T. E. Potter, M.D	Sept. 7	May 1	74
75	Hippocratean College of Medicine, St. Louis[4]	1907	.....	....	....	Emory Lanphear, M.D.	Sept. 7	June 19	75
76	Homeopathic Medical College of Missouri, St. Louis	1859	1860	1862–1864	....	L. C. McElwee, M.D.	Sept. 8	April 23	76
77	Kansas City Hahnemann Medical College, Kansas City	1902	1903	....	....	Frank Elliott, M.D.	Sept. 8	May 8	77
78	St. Lo[illegible]	1903	1904	....	See II-191.	E. P. Lyon, M.D.	Oct. 1	May 22	78
79	St. Lo[illegible]	1869	1870	1874–1879	....	Waldo Briggs, M.D.	Sept. 12	May 1	79
80	Univer[illegible] Columbia[6]	1845	1846	Note 6	See II-190.	A. W. McAlester, M.D.	Sept. 14	June 2	80
81	University Medical College, Kansas City	1888	1889	....	See II-210.	J. E. Logan, M.D.	Sept. 6	May 15	81
82	Washington University Medical Department, St. Louis	1891	1892	....	See II-207.	Wm. H. Warren, Ph.D.	Sept. 28	May 26	82
	NEBRASKA.								
83	John A. Creighton Medical College, Omaha	1892	1895	....	....	D. C. Bryant, M.D.	Sept. 1	May 1	83
84	Lincoln Medical College (Eclectic), Lincoln	1890	1891	....	....	F. L. Wilmeth, M.D.	Sept. 7	June 7	84
85	Nebraska College of Medicine, Lincoln	1905	1907	....	....	James F. Stevens, M.D.	Sept. 14	June 9	85
86	University of Nebraska, College of Medicine, Lincoln and Omaha	1902	1903	....	See II-216.	Henry B. Ward, Ph.D.	Sept. 16	May 20	86
	NEW HAMPSHIRE.								
87	Dartmouth Medical School, Hanover	1797	1798	....	....	William T. Smith, M.D.	Aug. 4	March 26	87
	NEW YORK.								
88	Albany Medical College, Albany	1838	1839	....	....	Samuel B. Ward, M.D.	Sept. 23	May 18	88
89	College of Physicians and Surgeons in the City of New York	1807	1811	....	See II-237.	Saml. W. Lambert, M.D.	Sept. 23	May 26	89
90	Cornell University Medical College, Ithaca and New York City	1898	1899	....	....	William M. Polk, M.D.	Sept. 30	June 9	90
91	Eclectic Medical College of the City of New York.	1866	1867	....	....	Geo. W. Boskowitz, M.D.	Sept. 15	May 15	91
	York City	1905	.....						
	York City	1905	.....	....	....	James J. Walsh, M.D.	Sept. 24	May 20	92
93	Long Island College Hospital, Brooklyn	1858	1859	....	....	John D. Rushmore, M.D.	Sept. 28	May 11	93
94	New York Homeopathic Medical College and Hospital, New York City	1887	1888	....	See II-255.	J. W. Dowling, M.D.	Oct. 6	May 12	94
95	New York Medical [illegible] Women (Homeopath[illegible]	1866	1867	....	See II-259.	Helen C. Palmer, M.D.	Oct. 1	May 14	95
96	Syracuse University, College of Medicine, Syracuse	1875	1876	....	See II-235.	John L. Heffron, M.D.	Oct. 6	June 10	96
97	University and Bellevue Hospital Medical College, New York City	1898	1899	....	See II-229.	Egbert LeFevre, M.D.	Sept. 30	June 2	97
98	University of Buffalo Medical Department, Buffalo	1846	1847	....	....	Matthew D. Mann, M.D.	Sept. 28	May 28	98
	NORTH CAROLINA.								
99	Leonard School [illegible]	1882	1886	1887	....	James McKee, M.D.	Oct. 1	May 13	99
100	North Carolina [illegible]	1893	1893	....	See II-275	W. O. Nisbet, M.D.	Sept. 9	April 20	100
101	University of [illegible] ment, Chapel [illegible]	1890	1903	....	....	H. A. Royster, M.D.	Sept. 7	May 29	101
102	Wake Forest S[illegible]	1902	.....	....	....	Watson S. Rankin, M.D.	Sept. 1	May 25	102
	NORTH DAKOTA.								
103	Medical College of the State University of North Dakota, University[7]	1905	.....	....	....	M. A. Brannon, A.M.	Sept. 22	June 17	103

For footnotes to this table see page 602.

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							Begins. 1908.	Ends. 1909.	
	OHIO.								
104	Cleveland College of Physicians and Surgeons, Cleveland	1896	1897	....	See II-281.	R. E. Skeel, M.D.	Oct. 1	May 20	104
105	Cleveland	1898	1898	....	See II-308.	George H. Quay, M.D.	Sept. 23	May 14	105
106	Eclectic M	1845	1846	....	See II-312.	R. L. Thomas, M.D.	Sept. 14	April 23	106
107	Medical C	1819	1821	....	....	Fred. Forchheimer, M.D.	Oct. 1	June 5	107
108	Miami Medical College, Cincinnati[8]	1852	1853	1858-1865	....	J. C. Oliver, M.D.	Oct. 1	June 5	108
109	Pulte Medical College, Cincinnati	1872	1873	....	....	Charles E. Walton, M.D.	Sept. 30	May 25	109
110	Starling-Ohio Medical College, Columbus	1907	1908	....	See II-305.	George M. Waters, M.D.	Sept. 23	May 18	110
111	Toledo Medical College, Toledo	1883	1883	....	....	James Donnelly, M.D.	Oct. 1	June 1	111
112	Western Reserve University, Medical Department, Cleveland	1881	1882	....	See II-285.	B. L. Millikin, M.D.	Oct. 1	June 17	112
	OKLAHOMA.								
113	College of Medicine of Epworth University, Oklahoma City	1904	1907	....	....	A. K. West, M.D.	Oct. 2	May 10	113
114	State University of Oklahoma, School of Medicine, Norman	1903	......	....	....	C. S. Bobo, M.D.	Sept. 15	June 10	114
	OREGON.								
115	Medical Department Willamette University, Salem[9]	1865	1867	1896	....	W. H. Byrd, M.D.	Oct. 5	May 15	115
116	University of Oregon Medical Department, Portland	1887	1888	....	....	S. E. Josephi, M.D.	Sept. 14	May 2	116
	PENNSYLVANIA.								
117	Hahnemann Medical College and Hospital, Philadelphia	1869	1870	....	See II-323.	Herb't L. Northrop, M.D.	Sept. 21	June 2	117
118	Jefferson "	1838	1839	....	See II-326.	James W. Holland, M.D.	Sept. 24	June 8	118
119	Medico-Ch	1881	1882	....	....	Seneca Egbert, M.D.	Sept. 23	June 5	119
120	Temple C " phia	1901	1901	....	....	I. Newton Snively, M.D.	Sept. 14	June 15	120
121	University of Pennsylvania, Department of Medicine,	1782	1783	....	See II-318.	Charles H. Frazier, M.D.	Sept. 25	June 16	121
122	Westeri	1886	1887	....	....	J. Chris Lange, M.D.	Oct. 1	June 15	122
123	Woman delphia	1850	1851	1861, 1862	....	Clara Marshall, M.D.	Sept. 23	May 26	123
	PHILIPPINE ISLANDS.								
124	Philippine Medical School, Manila	1907	......	....	....	Harry T. Marshall, M.D.	....	....	124
125	University of St. Thomas, Medical Department, Manila	1771	......	....	....	Lic. Blas C. Alenaz	....	....	125
	SOUTH CAROLINA.								
126	Medical College of the State of South Carolina, Charleston	1832	1833	1861 1865	See II-335.	Allard Memminger, M.D.	Oct. 1	April 10	126
	SOUTH DAKOTA.								
127	University of South Dakota, College of Medicine, Vermilion[7]	1907	......	....	....	Christ. P. Lommen, B.S.	Sept. 14	June 10	127
	TENNESSEE.								
128		1889	1890	....	....	J. R. Rathmell, M.D.	Sept. 23	April 26	128
129		1906	1907	....	....	Heber Jones, M.D.	Oct. 1	May 1	129
130		1900	1900	1907	See II-312.	H. M. Green, M.D.	....	....	130
131	"	1880	1881	....	....	W. B. Rogers, M.D.	Oct. 1	April 30	131
132	Meharry Medical College	1876	1877	....	....	G. W. Hubbard, M.D.	Sept. 9	April 6	132
133	Tennessee Medical College	1889	1890	....	....	S. L. Jones, M.D.	Oct. 1	May 1	133
134	University of Nashville, " Nashville[10]	1850	1852	....	....	William G. Ewing, M.D.	Sept. 15	April 30	134
135	University of Tennessee, Department of Medicine, Nashville "	1879	1880	....	See II-341.	Hilliard Wood, M.D.	Apr. 1	Oct. 31,'08	135
136	University of the (Sewanee Medical	1892	1893	....	....	John S. Cain, M.D.	Sept. 15	May 1	136
137	University of West ment (Colored), Memphis	1900	1901	....	....	M. V. Lynk, M.D.	Sept. 11	April 11	137
138	Vanderbilt University, Medical Department, Nashville[10]	1874	1875	....	....	William L. Dudley, M.D.	Sept. 16	May 1	138
	TEXAS.								
139	Baylor University College of Medicine, Dallas	1903	1904	....	See II-333.	Edward H. Cary, M.D.	Oct. 1	May 1	139
140	College of Physicians and Surgeons, Dallas[11]	1905	1905	....	See II-346.	Arthur C. Bell, M.D.	....	....	140
141	Medical Department of Fort Worth University, Fort Worth	1894	1895	....	....	W. R. Thompson, M.D.	Oct. 6	May 6	141
142	Southwestern University Medical College, Dallas.	1903	1904	....	....	Jno. O. McReynolds, M.D.	Oct. 1	April 30	142
143	University of Texas, Department of Medicine, Galveston	1891	1892	....	....	William S. Carter, M.D.	Oct. 1	May 29	143
	UTAH.								
144	University of Utah, Department of Medicine, Salt Lake City[7]	1906	......	....	....	Byron Cummings, A.M.	Sept. 14	June 2	144
	VERMONT.								
145	University of Vermont, College of Medicine, Burlington	1822	1823	1837-1853	....	Henry C. Finkham, M.D.	Nov. 11	June 24	145
	VIRGINIA.								
146	Medical College of Virginia, Richmond	1858	1859	....	See II-365.	Chris. Tompkins, M.D.	Sept. 15	May 19	146
147	University of Virginia Department of Medicine, Charlottesville	1825	1828	1865	....	R. H. Whitehead, M.D.	Sept. 10	June 16	147
148	University College of Medicine, Richmond	1894	1894	....	See II-364.	Paulus A. Irving, M.D.	Sept. 15	May 18.	148
	WEST VIRGINIA.								
149	W College of Medicine,	1902	......	....	....	J. N. Simpson, M.D.	Sept. 21	June 15	149
	WISCONSIN.								
150	Marquette University, Medical Department (Milwaukee Medical College), Milwaukee	1894	1895	....	....	Warren B. Hill, M.D.	Oct. 1	June 1	150
151	University of Wisconsin College of Medicine, Madison[7]	1907	......	....	....	Charles R. Bardeen, M.D.	Oct. 1	June 18	151
152	Wisconsin College of Physicians and Surgeons, Milwaukee	1893	1894	....	....	J. C. Phillips, M.D.	Sept. 29	May 27	152

For footnotes to this table see page 602.

II. COLLEGES EXTINCT, OR NO LONGER EXISTING UNDER NAME GIVEN.

Number.	NAME AND LOCATION OF COLLEGE.	Year Organized.	First Class Graduated.	Years When No Classes Graduated.	Last Class Graduated.	Year of Termination.	Remarks.	Number.
	ALABAMA.							
1	Graffenberg Institute, Dadeville	1852				1862	Extinct. Charter expired	1
2	Medical College of Alabama, Mobile	1859	1861	1862–1868	1907	1907	New title. See I-2	2
3	Medical College of Montezuma University, Bessemer	1896	1897		1898	1898	Extinct	3
4	Southern University, Medical Department, Greensboro.	1872			1880	1880	Extinct	4
	ARKANSAS.							
5	Arkansas Industrial University, Medical Department Little Rock	1879	1880		1899	1899	New title. See I-4	5
6	Bethel Medical Department of Southwestern University, Little Rock					1890*	Extinct (a)	6
7	Sulphur Rock College, Medical Department of Sulphur Rock	1898				1902	New charter. No grads. See II-349.	7
8	Texas Health College, Hot Springs	1893					Extinct. Fraudulent (b)	8
	CALIFORNIA.							
9	California Medical	1879	1880		1906	1906	New title. See I-5	9
10	California Medical S	1876				1877	Extinct.	10
11	Hahnemann Hospit Francisco	1888			1902	1902	New title. See I-9	11
12	Hahnemann Medical College, San Francisco	1883	1884			1888	New title. See II-11	12
13	Pacific Coast Regular College of Medicine, San Francisco	1900				1900	New title. See II-17. Fraudulent.	13
14	Toland "	1863	1865		1872	1872	New title. See I-11	14
15	Univers partment	1873				1882	New title. See I-8	15
16	University of the Pacific, Medical Department, San Francisco	1858	1859	1865–1869		1873	New title. See II-15	16
17	West Coast Medical College, San Francisco	1900				1900	Extinct. No graduates (c)	17
	COLORADO.							
18	Denver College of Medicine, Denver	1881	1882		1901	1902	Merged with II-20 to form I-13	18
19	Denver Homeopathic College, Denver	1894	1895		1906	1907	New title. See II-21	19
20	Gross Medical College, Denver	1887	1888		1901	1902	Merged with II-18 to form I-13	20
21	Westminster University College of Medicine	1907	1907		1907	1908	New title. See I-14	21
	CONNECTICUT.							
22	Medical Institution of Yale College	1813	1814			1879	New title. See I-16	22
	DISTRICT OF COLUMBIA.							
23	Columbian University Medical Department, Washington	1873	1874		1904	1904	New title. See I-17	23
24	National Homeopathic Medical College, Washington	1893	1894		1895	1896	New title. See II-27	24
25	National Medical College, Washington	1825	1826	1834–1838 1861–1863	1873	1873	New title. See II-23	25
26	National University Medical Department, Washington	1884	1885		1903	1903	Merged into II-23	26
27	Washington Homeopathic Medical College, Washington.	1896	1896		1896	1896	Extinct. Ten graduates	27
	FLORIDA.							
28	University of Florida Medical Department, Tallahassee, Jacksonville	1883				1886	Extinct	28
	GEORGIA.							
29	Atlanta Medical College, Atlanta	1855	1856	1861–1865	1898	1898	Merged with II-41 to form I-20	29
30	Clark University, Medical Department, Atlanta	1886				1886	Extinct. No classes graduated	30
31	College of American Medicine and Surgery, Forsyth-	1874	1874	1877–1881	1883	1884	Merged into II-33	31
32	ge, Dalton	1886					Extinct (a)	32
33	ical	1877	1877		1886	1886	New title. See I-22	33
34	Mi Atlanta	1904	1906		1908	1908	Suspended	34
35	Medical Academy of Georgia, Augusta	1828				1829	New title. No graduates. See I-23.	35
36	Middle Georgia Medical College, Griffin	1859					Extinct (a)	36
37	Oglethorpe Medical College, Savannah	1856				1861	Extinct	37
38	Reform Medical College of Georgia, Macon	1854		1861–1867		1874	New title. See II-31	38
39	Savannah Medical College, Savannah	1838		1861–1866		1880	Extinct.	39
40	Southern Botanico Medical College,, Forsyth-Macon-Atlanta	1839	1841			1854	New title. See II-38	40
41	Southern Medical Colle	1878	1880		1898	1898	Merged with II-29 to form I-20	41
42	Thompsonian College,	1850					Extinct.	42
43	Woman's Medical Coll School for Nurses, Atlanta	1889	1890		1891	1891	Extinct	43
	ILLINOIS.							
44	American College of Medicine and Surgery, Chicago	1902	1903		1907	1907	New title. See I-26	44
45	Chaddock School of Medicine, Quincy	1888	1889		1890	1890	Extinct. Had 30 graduates	45
46	Chicago College of Medicine and Surgery, (Physio-medical), Chicago	1897				1899	Merged with II-53 to form I-27. No classes graduated	46
47	Chicago College of Science, Chicago	1888				1889	Extinct. Fraudulent	47
48	Chicago Correspondence University, Chicago	1885				1887	Extinct. Fraudulent	48
49	Chicago Eclectic Medical College, Chicago	1901				1902	New title. See II-44. No graduates.	49
50	Chicago Homeopathic Medical College, Chicago	1876	1877		1904	1904	Merged into I-29	50
51	Chicago Medical College	1864			1891	1891	New title. See I-34	51
52	Chicago Northwestern College	1862				1870	New title. See II-59. Fraudulent.	52
53	Chicago Physio-Medical College	1891	1891		1899	1899	Merged with II-46 to form I-27	53
54	Chicago Physio-Medical Institute	1885	1886		1890	1891	New title. See II-53	54
55	College of Physicians and Surgeons of the Upper Mississippi, Rock	1848	1850			1850	New title. See II-108	55
56	Dearborn Medic	1903	1904		1907	1907	Extinct. A night school	56
57	Dunham Medica	1895	1896		1902	1902	Merged into I-30	57
58	Dutton Medical College, Chicago					1903*	Fraudulent. Extinct	58
59	Edinburg University of Chicago and St. Louis, Chicago.	1870					Extinct. Fraudulent	59
60	German Academy of Physiatric Physicians, Chicago	1892					Extinct. Fraudulent (d)	60
61	German-American Homeopathic Medical College, Chicago	1892					Extinct. Fraudulent (d)	61
62	German College of Gynecology, Pediatrics and Obstetrics, Chicago	1892					Extinct. Fraudulent (d)	62
63	German College "	1891					Extinct. Fraudulent (d)	63
64	German Homeo "	1891					Extinct.	64
65	German Medical College, Chicago	1891					Extinct.	65
66	Harvey Medical College, Chicago	1891	1895		1905	1905	Extinct.	66
67	Illinois Health University, Chicago					1897	Charter revoked. Fraudulent (e)	67
68	Illinois Standard College of Medicine and Surgery					1898*	Extinct. Not recognized (a)	68

* Date given is approximate. Footnotes, (a), (b), etc., will be found on page 602.

Number.	NAME AND LOCATION OF COLLEGE.	Year Organized.	First Class Graduated.	Years When No Classes Graduated.	Last Class Graduated.	Year of Termination.	Remarks.	Number.
	ILLINOIS—Continued.							
69	Independent Medical College, Chicago	....				1899	Charter revoked. Fraudulent (e)	69
70	International Medical Missionary Institute	1895					Extinct (a)	70
71	Medical Department of *Illinois, Jacksonville*	*1843*				1848	Extinct. Had 37 graduates	71
72	Medical Department of Lind University, Chicago	1859	1860			1864	New title. See II-51	72
73	Medical Department University of St. Charles, St. Charles	1844				1845	Extinct	73
74	Metropoli	....				1900	Charter revoked. Fraudulent (e)	74
75	National	1891	1892		1895	1895	New title. See II-76	75
76	National	1895	1896		1899	1900	New title. See I-33	76
77	National	1889					Extinct. Fraudulent	77
78	Northwes	1875				1878	New title. Fraudulent. See II-92 (f)	78
79	Northwes. Chicag	1892	1892		1901	1901	Extinct	79
80	*Quincy*	*1882*	*1881*		*1888*	*1888*	*New title. See II-45*	80
81	Woman	1870	1871	1872-1878	1891	1892	New title. See II 79	81
	INDIANA.							
82	American Medical College, Indianapolis	1894	1895		1897	1897	Extinct (g)	82
83	Beach Medical College,	1883				1884	New title. See II-84	83
84	Beach Medical Institute	1884	1885		1885	1886	Merged into II-96 (h)	84
85	Central College of Physi olis	1879	1880		1905	1905	Merged with II-103 to form II-99	85
86	College of Physicians and Surgeons of Indiana, Indianapolis	1873	1874		1878	1878	Merged with II-98 to form II-103	86
87	Curtis	1893				1898	Extinct (g)	87
88	Curtis	1881				1890	Extinct (g), (h)	88
89	Departı lege,	1878				1890	Extinct. Fraudulent (f)	89
90	Eclectic olis	1890	1891		1894	1894	Extinct	90
91	Eclecti	1900	1903		1908	1908	Suspended	91
92	Fort V	1879	1880	1899	1905	1905	Merged with II-103 to form II-99	92
93	Hospit	1882	1883		1886	1886	Extinct	93
94	Indian	1850				1854	Extinct	94
95	Indian. olis	1873				1888*	Extinct. Fraudulent (f)	95
96	Indiana Eclectic Medical College, Indianapolis	1880	1881		1890	1890	Extinct (h)	96
97	Indiana Medical College, LaPorte	1845				1849	Extinct	97
98	Indiana Medical College, Indianapolis (No. 1)	1869	1870		1878	1878	Merged with II-85 to form II-103	98
99	Indiana Medical College, Indianapolis (No. 2)	1905	1906		1908	1908	Merged into I-128	99
100	LaPorte University, Medical Department, LaPorte	1844				1845	New title. See II-97	100
101	Medical College of Evansville, Evansville	1849	1850	1851-1872	1884	1884	Extinct	101
102	Medical College of Fort Wayne, Fort Wayne	1876	1877		1883	1883	Extinct	102
103	Medical College of Indiana, Indianapolis	1878	1879		1905	1905	Merged with II-85, 92, to form II-99.	103
104	State College of Physicians and Surgeons, Indianapolis.	1906	1907		1907	1907	New title. See I-38	104
105	University of Indiana, New Albany	1833					Extinct. Fraudulent	105
106	University of Indianapolis, Indianapolis	...				1891*	Non-existant (i)	106
107	University of Medicine, Indianapolis	1897	1898				Extinct (g)	107
	IOWA.							
108	College of Physicians and Surgeons, Keokuk	1849	1850		1899	1899	Merged with II-114 to form I-40 (j)	108
109	Council Bluffs Medical College, Council Bluffs	1893				1895	Extinct. No graduates	109
110	Iowa College of Physicians and Surgeons, Des Moines.	1882	1883		1903	1903	New title. See I-39	110
111	Iowa Eclectic Medical College, Des Moines	1881	1882	1884-1887	1893	1893	Extinct. See II-112 (h)	111
112	Iowa Medical College, Eclectic, Des Moines	1883	1884			1887	Extinct (h)	112
113	Iowa Medical College, Keokuk	1858				1860	Extinct	113
114	Keokuk Medical College, Keokuk	1890	1891		1899	1899	Merged with II-108 to form I-40	114
115	King Eclectic Medical College, Des Moines	1883	1884			1889*	Extinct (k)	115
	KANSAS.							
116	College of Physicians and Surgeons, Kansas City	1894	1895		1905	1905	Merged. See I-45	116
117	Eclectic Medical University, Kansas City	1898	1900		1908	1908	New title. See I-46	117
118	Kansas City College of Medicine and Surgery, Kansas City	1897	1898		1898	1898	New title. See II-191	118
119	Kansas	1872	1874		1875	1875	Extinct	119
120	Wichit	1889				1890	Extinct. No graduates	120
	KENTUCKY.							
121	Eclectic Medical College,	1848					Extinct	121
122	Hospital College of Medic	1874	1875		1907	1907	Merged with II-127 to form II-126	122
123	Jefferson School of Medic	1882	1882		1882	1882	Extinct	123
124	Kentucky School of Medi	1850	1851		1908	1908	Merged into I-49	124
125	Kentucky University Medical Department, Louisville	1898	1899		1906	1906	Merged into I-49	125
126	*Louisville and Hospital Medical College, Louisville*	*1907*	*1908*		*1908*	*1908*	*Merged into I-49*	126
127	Louisville Medical College, Louisville	1869	1870		1907	1907	Merged with II-122 to form II-126	127
128	Louisville Medical Institute, Louisville	1837	1838		1846	1846	New title. See I-49	128
129	Medical Department State University (Colored) Louisville	1899				1903	Merged into I-47. No graduates	129
130	Medical Department of Transylvania University, Lexington	1817	1818			1859	New title. See II, 124	130
	LOUISIANA.							
131	Charity Hospital Medical College, New Orleans	1873				1877	Extinct	131
132	Medical College of New Orleans, University, New Orleans	1889	1892	1893	1902	1902	New title. See I-50	132
133	Medical College of Louisiana, New Orleans	1834	1835	1863-1865	1884	1884	New title. See I-51	133
134	New Orleans School of Medicine, New Orleans	1856				1870	Extinct	134
	MAINE.							
135	Druidic University of Maine, Lewiston	1880				1887	Charter revoked (h) (l)	135
136	Eclectic Medical College of Maine, Lewiston	1881				1887	Charter revoked (h) (l)	136
137	Portland School for Medical Instruction, Portland	1858				1902	Extinct. No graduates	137
	MARYLAND.							
138	Baltimore University School of Medicine, Baltimore	1884	1885		1907	1907	Extinct	138
139	College of Medicine of Maryland, Baltimore	1807	1810		1812	1812	New title. See I-58	139
140	Medical Department of Washington College, Baltimore.	1827	1828			1840	New title. See II-143	140
141	Theological College of Christ's	1900					(m)	141
142		1891	1892		1907	1907	New title. See I-53	142
143		1840		1851-1866		1877	Merged into I-55	143

* Date given is approximate. Footnotes, (a), (b), etc., will be found on page 602.

Number.	NAME AND LOCATION OF COLLEGE.	Year Organized.	First Class Graduated.	Years When No Classes Graduated.	Last Class Graduated.	Year of Termination.	Remarks.	Number.
144	Massachusetts, Boston					1883	Extinct. Fraudulent	144
145	Pittsfield	1823				1867	Extinct.	145
146	partment, Worcester	1887					Extinct. Did not grant degrees	146
147	Boston					1883	Extinct. Fraudulent (n)	147
148	American Health Society, Boston					1883	Moved. See II-362. Fraudulent (o).	148
149	Medical Department of the American University of Boston, Boston					1883	Extinct. Fraudulent	149
150	New England	1848				1852	New title. See II-154	150
151	New England Boston	1848				1874	Merged with I-60	151
152	New Engl					1881	Extinct. Fraudulent	152
153	Reserved field					1893	Extinct. Fraudulent	153
154	Worcester Medical College, Eclectic, Worcester	1852				1859	Suspended	154
	MICHIGAN.							
155	Detroit Medical College, Detroit	1868	1869		1885	1885	Merged with II-159 to form I-64	155
156	Detroit University of Medicine, Detroit	1881					Extinct	156
157	Detroit University of Rational Medicine and Surgery, Detroit	1880					Extinct	157
158	Grand Rapids Medical College, Grand Rapids	1897	1893		1907	1907	Extinct	158
159	Michigan College of Medicine, Detroit	1880	1881		1885	1885	Merged with II-155 to form I-64	159
160	Michigan College of Medicine and Surgery, Detroit	1888	1889		1906	1907	Extinct	160
161	Michigan Eclectic Medical College, Detroit	1880					Extinct	161
162	Michigan Homeopathic Medical College	1872				1873	Extinct	162
163	Michigan Medical College, Lansing	1871				1873	Extinct	163
164	Michigan School	1863					Extinct	164
165	Saginaw Valley	1896	1897		1903	1903	Merged into II-160	165
	MINNESOTA.							
166	Minneapolis College of Physicians and Surgeons, Minneapolis	1883	1886		1908	1908	Merged into I-68	166
167	Minnesota	1881				1888	New title. See I-69	167
168	Minnesota	1831				1888	Absorbed by I-63	168
169	St. Paul M	1878		1880-1885	1887	1887	Merged into I-63	169
170	Winona Medical School	1872					Extinct. No diplomas issued	170
	MISSOURI.							
171	American Anthropological University of St. Louis					1885*	Extinct. Fraudulent	171
172	Beaumont Hospital Medical College, St. Louis	1886	1887			1901	Merged with II-192 to form II-191	172
173	Central Medical College of St. Joseph, St. Joseph	1894	1895		1905	1905	Merged with I-74 to form II-179	173
174	College of Homeopathic Medicine and Surgery of the Kansas City University	1896	1897		1900	1900	New title. See II-180	174
175	College of Physicians and Surgeons of Kansas City	1869	1870		1880	1880	New title. See II-189	175
176	College of Physicians and Surgeons of St. Joseph, St Joseph	1878	1870		1881	1882	Merged with II-200 to form II-201	176
177	College of	1839	1870		1871	1872	Extinct	177
178	Columbia	1898	1899		1900	1901	Merged into II-194	178
179	Ensworth	1905	1906		1907	1908	Resumed former name. See I-74	179
180	Hahnema i- versity, Kansas City	1900	1901		1902	1902	Merged with II-187 to form I-77	180
181	Hering Medical Coll	1880				1882	Merged into I-76	181
182		1873					Extinct. Fraudulent	182
183		1859				1866	New title. See II-184	183
184		1863	1867		1868	1869	Extinct	184
185	ns and Surgeons, Joplin	1880	1881			1884	Extinct (h)	185
186		1881				1882	Extinct (h)	186
187		1888	1889		1902	1902	Merged with II-180 to form I-77	187
188	Kansas City Hospital Co	1882	1883			1888	Extinct (h)	188
189	Kansas City Medical College, Kansas City	1880	1881		1905	1905	Merged into I-45	189
190	Kemper College Medical Department (McDowell Medical College), St. Louis	1840	1841		1845	1845	New title. See	190
191	College of Medicine, St. Louis,	1901	1901		1903	1903	New title. Se	191
192	f Medicine, St. Louis	1890	1891		1900	1901	Merged with	192
193	nsas City, Kansas City	1869				1873	Extinct. Held three sessions	193
194	llege, Kansas City	1898	1899		1905	1905	Merged into I-45	194
195	cal College, Kansas City						Extinct. (a) Not existing since 1900.	195
196	Missouri Medical College (McDowell Medical College), St. Louis	1855		1862-1865	1899	1899	Merged into I-82	196
197	Missouri School of Midwifery and Diseases of Women and Children, St.					1891*	Extinct. Fraudulent	197
198	Northwestern Medic					1894	Extinct	198
199	Occidental College o					1887	Extinct	199
200	St. Joseph Hospital					1882	Merged with II-176 to form II-201	200
201	St. Joseph Medical College, St. Joseph	1882				1888	New title. See I-74	201
202	St. Louis College of Homeopathic Physicians and Surgeons, St. Louis	1869		1871-1880	1882	1882	Merged into I-76	202
203	St. Louis College of Medicine and Natural Sciences, St. Louis	1855				1859	New title. See II-183 (p)	203
204	St. Louis	1874				1883	Closed by legal process (h)	204
205	St. Louis	1873	1874		1874	1874	Extinct. Graduated 4 students	205
206	St. Louis geons, St. Louis	1887				1893*	Extinct	206
207	St. Louis Medical College	1855	1856		1891	1891	New title. See I-82	207
208	St. Louis University Medica	1842	1843		1855	1855	New title. See II-207. See also I-78.	208
209	St. Louis Woman's Medical	1894	1895		1896	1896	Extinct (q)	209
210	University of Kansas City sas City	1881	1882		1888	1888	New title. See I-81	210
211	Woman's	1895	1896		1903	1903	Extinct	211
212	Woman's	1891	1893				Extinct (q)	212
213	Woman's	1883				1884	Extinct	213
	NEBRASKA.							
214	Nebraska School	1880				1881	New title. No graduates. See II-215.	214
215	Omaha Medical	1881	1882		1902	1902	New title. See I-86	215
216	University of N oln	1870	1884		1887	1887	Extinct. See also I-86	216
217	College of Medicine, Homeo- ncoln	1883	1884		1887	1887	Extinct	217
218	, College of Medicine, Eclectic Department, Lincoln	1883				1885	Extinct	218

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* Date given is approximate. Footnotes, (a), (b), etc., will be found on page 602.

Number.	NAME AND LOCATION OF COLLEGE	Year Organized	First Class Graduated	Years When No Classes Graduated	Last Class Graduated	Year of Termination	Remarks.	Number.
	NEW HAMPSHIRE							
219	New England University of Arts and Sciences, Manchester	1876				1877	Charter repealed Fraudulent	219
220	University of New Hampshire, Department of Medicine Nashua	1888					Extinct Fraudulent (r)	220
	NEW JERSEY							
221	Central University o					1891	Charter repealed Fraudulent	221
222	Hygeio Therapeutic					1891	Charter repealed Fraudulent	222
223	Livingston Universit					1891	Charter repealed Fraudulent	223
224	Medical and Surgical College of the State of New Jersey	1888				1891	Charter repealed (s)	224
	NEW YORK							
225	American College of Arts and Sciences, Buffalo	1886				1893	Charter revoked Fraudulent (r)	225
226	American Society of Arts and Sciences, Buffalo	1883				1893	Charter revoked Fraudulent (r)	226
227	American Society of Literature and Art, Buffalo	1888				1893	Charter revoked Fraudulent (r)	227
228	American College of Medical Science, New York City	1858					Extinct No graduates	228
229	Bellevue Hospital Medical College, New York City	1861	1862		1898	1898	Merged with II 263 to form I 97	229
230	Brooklyn Academy of Medicine, Eclectic, Brooklyn	1861				1888	Charter revoked Not a teaching body	230
231	Buffalo College of Rational Medicine, Homeopathic Buffalo	1879					Extinct Fraudulent	231
232	Central Medical College of New York, Eclectic, Syracuse	1849				1850	Moved New title See II 268 (t)	232
233	College	18[illegible]6				1846*	Extinct (t)	233
234	College Buffalo	1880	1881		1881	1881	Charter revoked (u)	234
235	College of trict of	1809	1816		1839	1840	Extinct Total graduates 589	235
236	College of versity Syracuse	1872	1873		1875	1875	New title See I 96	236
237	Columbia College, Medical Faculty, New York City	1792	1793	1795 1801 1803 1809	1810	1813	Merged into I 89	237
238	Druidic Banchoreion, Buffalo	1886				1893	Charter revoked Fraudulent (t)	238
239	Eclectic Medical Institute of New York, Rochester	1848				1849	Merged with II 267 to form II 232 (t)	239
240	Excelsior Medical College, New York City	18[illegible]7				1870	Extinct (t)	240
241	Geneva Medical College, Geneva	1861	1862		1872	1872	Merged into II 236 See II 248	241
242	Hamburg Canal College Buffalo					1858*	Extinct Fraudulent	242
243	Homeopathic College of Physicians and Surgeons Buffalo	1879	1880		1880	1880	New title See II 231	243
244	Homeopathic Medical College of the State of New York New York City	1860	1861		1869	1869	New title See II 255	244
245	Kings College Medical Faculty	1767	1769		1774	1776	New title See II 237	245
246	Medical and Surgical Institute and Sanitarium Buffalo	1886				1893	Charter revoked Fraudulent (r)	246
247	Medical Faculty of Rutgers (Queen's) College	1826	1827		1827	1827	Extinct See II 252 (t)	247
248	Medical Institution of Geneva Geneva	1835	1835	1854	1861	1861	New title See II 241	248
249	Medical School of Fredonia Fredonia	1847				1848	New title See II 269	249
250	Metropolitan Medical College, Eclectic, New York City	1852				1862	Charter revoked Four classes graduated (t)	250
251	Mohawk Medical College Buffalo	1879				1884	Extinct Fraudulent Continuation of II 234	251
252	New Medical Institution New York City	1792	1792	1794 1826	1827	1827	Extinct Same college as II 247 and II 266	252
253	New York College of Magnetics New York City	1887				1893	Charter revoked (t)	253
254	New York Free Medical College for Women New York City	1871	1874		1875	1876	Extinct Diplomas recognized	254
255	New York Homeopathic Medical College, New York City	1869	1870		1887	1887	New title See I 94	255
256	New Y	1857				1864	Extinct	256
257	New Y	1857				18[illegible]*	Extinct Fraudulent Not chartered	257
258	New Y	1850	1851		1864	1864	Extinct	258
259	New Y New York City	1863	1864		1866	1866	New title See I 95	259
260	New York Preparatory School of Medicine, New York City	1859					Extinct (t)	260
261	New York Reformed Medical College, Eclectic, New York City	1826				1829*	Extinct (t)	261
262	New York School of Medicine New York City	1831				1833	Extinct	262
263	New York University Medical College, New York City	1841	1842		1898	1898	Merged with II 229 to form I 97	263
264	Niagara University Medical Department, Buffalo	1883	1883		1898	1898	Merged with I 95	264
265	Preparatory Medical College, New York City and Poughkeepsie	1890				1893	Exposed Fraudulent	265
266	Queen's College (New Jersey), Faculty of Medicine New York City	1792	1792		1793	1793	New title See II 247	266
267	Randolph Eclectic	1848				1849	Merged with II 239 to form II 232 (t)	267
268		1850				1852	Extinct (t)	268
269						1877*	Extinct Fraudulent (t)	269
270	ge Rochester	1850				1855	Extinct (t) See II 273	270
271	College Eclectic, New York City	1878	1879		1883	1884	Declared illegally chartered	271
272	Woman for W	1868	1870		1899	1899	Extinct Recognized	272
273	Worces	1846				1852	Extinct (t) See II 270	273
	NORTH CAROLINA							
274	College geons Arlington	1871					Extinct	274
275	Davidso Davidson	1889				1893	New title See I 100 No graduates	275
276	Edinbor Lumberton	1868					Extinct Had 1 professor	276
	OHIO							
277	American Eclectic Medical College, Cincinnati	1870			1896	1896	Extinct (v)	277
278	American Health College,	1874					Extinct Fraudulent	278
279	American Medical College,	1839				1857	Merged into I 106	279
280	Botanico Medical College o	1838				1850	Extinct	280
281	Charity Hospital Medical College Cleveland	1863	1865		1869	1869	New title See II 307	281
282	Cincinnati College of Medicine and Surgery, Cincinnati	1849	1852		1901	1901	Extinct Dept for women See II 311	282
283	Cincinnati Medical College, Cincinnati	1834				1846	Merged into I 107	283
284	Cincinnati Physio Medical College, Cincinnati	1836				1880	Extinct	284
285	Cleveland Medical College, Cleveland	1843	1845	1862 1863	1881	1881	New	285
286	Cleveland Medical College, Homeopathic	1890	1891		1897	1898	Merg	286

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* Date given is approximate. Footnotes (a), (b), etc., will be found on page 602

Number.	NAME AND LOCATION OF COLLEGE.	Year Organized.	First Class Graduated.	Years When No Classes Graduated.	Last Class Graduated.	Year of Termination.	Remarks.	Number.
	OHIO—Continued.							
287	Cleveland University of Medicine and Surgery, Cleveland	1894	1895		1897	1898	Merged with II-286 to form I-105	287
288	College of Medicine, Medical Department of National Normal University, Lebanon	1889	1891	1897-1899	1900	1900	Extinct	288
289	Columbu	1875	1876		1892	1892	Merged into II-305	289
290	Dayton	1886	1887		1889	1889	Extinct	290
291	Eclectic	1856	1857		1859	1859	Merged into I-106	291
292	Homeop	1870	1871		1894	1894	New title. See II-287	292
293	Hygeia	1893	1895				Extinct (w)	293
294	Homeop	1868				1870	Merged into II-292	294
295	Inter-Na ford, Ont., and	1861				1894	Extinct. See II-321 (w)	295
296	Laura Memorial	1895	1896		1903	1903	Extinct	296
297	Medical Universi	1883				1891*	Extinct. Fraudulent	297
298	Northwestern Ohio Medical College	1883	1884		1891	1891	Extinct	298
299	Ohio College of Obstetrics, Medicine and Midwifery, Cincinnati	1889					Extinct. Fraudulent	299
300	Ohio Medical University, Columbus	1890	1893		1907	1907	Merged with II-305 to form I-110	300
301	Physio-Eclectic Medical College, Cincinnati	1876				1879	New title. See II-277. Fraudulent.	301
302	Physio-Medical College, Cincinnati	1836				1880	Extinct (x)	302
303	Physio-Medical Institute, Cincinnati	1859				1885	Extinct	303
304	Presbyterian Hospital and Woman's Medical College, Cincinnati	1891	1892		1895	1895	Merged with II-311 to form II-296	304
305	Starling Med	1847	1848		1907	1907	Merged with II-300 to form I-110	305
306	Tolédo Schoo	1878				1881	Extinct. No graduates	306
307	University of Wooster, Medical Department, Cleveland.	1869	1870	1881	1896	1896	New title. See I-104	307
308	Western College of Homeopathic Medicine, Cleveland	1849	1853		1857	1857	New title. See II-309	308
309	Western Homeopathic College, Cleveland	1857	1858		1870	1870	New title. See II-292	309
310	Willoughby University, Medical Department, Willoughby, Lake County,	1835				1847	Merged into II-305	310
311	Woman's Medical College	1887	1888		1895	1895	Merged with II-304 to form II-296	311
312	Worthington Medical Coll	1832	1834	1839-1843	1845	1845	New title. See I-106	312
313	Zanesville Academy of Me	1877				1881	Closed by court	313
	OKLAHOMA.							
314	Oklahoma Medical College, Oklahoma City	1907				1907	Suspended. No degrees given	314
315	Twentieth Century Physio-Medical College, Guthrie	1900				1904	Charter revoked. Fraudulent (y)	315
	PENNSYLVANIA.							
316	American College of Medicine in Pennsylvania and the Eclectic Medical College of Philadelphia	1853*				1856*	New title. See II-320	316
317	American University of Pennsylvania, Eclectic, Philadelphia	1867				1880	Extinct. Fraudulent	317
318	College of	1765	1768	1772-1779	1782	1782	New title. See I-121	318
319	Eclectic Me	1856				1880	Extinct. Fraudulent. Do not confuse with II-320	319
320	Eclectic Medical College of Philadelphia	1856				1865	New title. See II-331	320
321	Electropathic Institute, Philadelphia	1861				1876	Moved to Canada, then Ohio. See II-295	321
322	Franklin Medical College, Philadelphia	1847				1852	Extinct	322
323	Hahnemann Medical College of Philadelphia	1866	1867		1869	1869	Merged with II-324 to form I-117	323
324	Homeopathic Medical College of Pennsylvania, Philadelphia	1848	1849		1869	1869	Merged with II-323 to form I-117	324
325	Lincoln University Medical Department, Oxford	1870				1872	Extinct	325
326	Medical Department of Jefferson College, Philadelphia.	1825	1826		1838	1838	New title. See I-118	326
327	North American Academy of the Homeopathic Healing Art, Allentown	1835				1841*	Extinct	327
328	Penn Medical University, Philadelphia	1853		1868-1874		1881	Extinct	328
329	Pennsylvania Medical College, Philadelphia	1839				1861	Extinct	329
330	Philadelphia College of Medicine and Surgery, Philadelphia	1846				1859	Merged into II-329	330
331	Philadelphia University of Medicine and Surgery, Philadelphia	1865				1880	Extinct. Fraudulent	331
332	Thompsonian Medical College, Allentown, Pa	1904					(z))	332
	RHODE ISLAND.							
333	Brown University, Medical Department, Providence	1811	1814	1821	1827	1827	Extinct	333
	SOUTH CAROLINA.							
334	Charleston Medical School, Charleston	1894				1895*	Extinct (a)	334
335	Medical College of South Carolina, Charleston	1823	1825		1832	1832	New title. See I-126	335
336	University of South Carolina Medical Department, Columbia	1866				1876	Extinct	336
337	ge, Memphis	1857				1859	New title. See II-339	337
338	Medical College (Colored),	1899			1904	1904	Extinct	338
339		1859				1861	Extinct	339
340		1889		1893-1896		1896	Extinct. No evidence of any graduates	340
341	Jefferson Medical Association, Dandridge	1854				1875*	Extinct. Four diplomas granted (aa)	341
342	Knoxville College, Medical Department (Colored), Knoxville	1895		1896-1897		1900	Extinct. See I-130	342
343	Memphis Medic	1854		1861-1868		1873	Extinct	343
344	Nashville Medic	1876	1877			1896	New title. See I-135 (bb)	344
345	Shelby Medical	1858				1862	Extinct	345
	TEXAS.							
346	Bell Medical College, Dallas	1903	1904		1905	1905	New title. See I-140	346
347	Dallas Medical College, Dallas	1900	1901		1904	1904	Merged with I-139	347
348	Galveston Medical College, Galveston	1864				1873	New title. See II-352 (cc)	348
349	Gate City Medical College, Texarkana	1902				1908	Suspended	349
350	Medical Department of the University of San Antonio, San Antonio	1888					Extinct. No graduates	350
351	Physio-Medical	1902	1902		1908	1908	Merged into I-27	351
352	Texas Medical	1873		1882-1888		1891	Extinct	352
353	University of I	1900	1901		1903	1903	New title. See I-139	353
354	University of Medicine and Surgery, Dallas	1906					No graduates	354
	UTAH.							
355	Medical Institution of Morgan City, Morgan City	....				1883*	Extinct	355

* Date given is approximate. Footnot[illegible] page 602.

E. M. E. Medical College

Number.	NAME AND LOCATION OF COLLEGE.	Year Organized.	First Class Graduated.	Years When No Classes Graduated.	Last Class Graduated.	Year of Termination.	Remarks.	Number.
	VERMONT.							
356	Castleton Medical Academy, Castleton	1818				1821	New title. See II-361	356
357	Castleton Medical College, Castleton	1841				1861	Extinct	357
358	Clinical School of Medicine	1827			1835	1835	New title. See II-363	358
359	Trinity University, Coll. of Med. and Surg. of the State of Vermont, Bennington	1889					Extinct. Fraudulent (r)	359
360	Union Medical Institute, Newbury	1887					Extinct. Fraudulent	360
361	Vermont Academy of Medicine	1821		1839		1841	New title. See II-357	361
362	Vermont Medical College (the Second Medical College of the American Health Society), Rutland	1883				1893	Extinct. Fraudulent (o)	362
363	Vermont Medical College, Woodstock	1835	1836			1856	Extinct. See II-358. Reputable	363
	VIRGINIA.							
364	College of Physicians and Surgeons, Richmond	1893				1894	New title. See I-148	364
365	Hampden Sydney College, Medical Department, Richmond	1838	1840		1858	1858	New title. See I-146	365
366	Medical School of the Valley of Virginia, Winchester	1826				1861	Extinct	366
367	Randolph Macon College, Medical Department, Prince Edward Court House	1849				1855	Extinct	367
368	Winchester Medical College, Winchester	1826		1829-1850		1862*	Extinct	368
	WASHINGTON.							
369	Northwestern College of Biochemistry, Spokane	1892				1893*	Extinct. Fraudulent	369
370	University of Spokane Falls, Coll. of Med., Spokane	1890					No sessions held	370
371	University of Washington Medical Department	1885					No sessions held	371
372	Washington Biochemic Medical College, North Yakima	1889				1892	New title. See II-369. Fraudulent (dd)	372
	WISCONSIN.							
373	Milwaukee College of Physicians and Surgeons (Coney Medical Institute), Milwaukee	1881				1883	Charter annulled. Fraudulent	373
374	Wisconsin Eclectic Medical School, Milwaukee	1894				1898	Suppressed. Fraudulent	374

* Date given is approximate.

REFERENCES TO TABLE 4, PART I.

1. See also II-16.
2. Reported not in good standing by the Illinois State Board of Health.
3. Graduated two classes each year from 1874 to 1883 inclusive.
4. Reported not now in good standing by the Missouri State Board of Health.
5. The name of this college during 1906 and 1907 was the Ensworth-Central Medical College. See II-179.
6. No classes were graduated in 1857, 1858, 1860 to 1873 inclusive, 1887 to 1890 inclusive, 1892 and 1902.
7. Offers only the first two years of the medical course.
8. *These colleges in 1909 will become the College of Medicine of* the University of Cincinnati.
9. Was located at Portland from 1878 to 1895.
10. From 1874 to 1895 sessions were held jointly by the University of Nashville and Vanderbilt University Medical Departments, each university graduating its own portion of the class each year.

REFERENCES TO TABLE 4, PART II.

(a) Physicians have appeared before state boards claiming graduation from these colleges.

(b) Incorporated by one Orrin Robertson et al., all claiming to be "M.D.'s," although the sources of their degrees are unknown. Exposed by the Hot Springs (Ark.) Medical Journal. (Rauch.)

(c) Said to have existed only on paper.

(d) These six colleges were organized by one Johann Malok of Chicago, and were all declared fraudulent by the Illinois State Board of Health. (Rauch.)

(e) Organized by "J. Armstrong, M.D.," et al. The charters of these three institutions were revoked by the Supreme Court on the ground of fraud. In 1900 Armstrong was sentenced to jail for eighteen months and fined $500.

(f) This and two other institutions were organized by one Charles P. Heil. All were listed as "fraudulent" by the Illinois State Board of Health.

(g) Reported as "not recognized" by the Indiana State Board of Medical Registration and Examination.

(h) Diplomas not recognized by the Illinois State Board of Health. (Rauch.)

(i) A "graduate" of this institution appeared in England in 1891.

(j) This was the Medical Department of the State University of Iowa from 1854 to 1870 inclusive.

(k) In 1899 this school was declared not in good standing by the Iowa State Board of Medical Examiners. (Kennedy.)

(l) Reported "not recognized" by the Maine Board of Registration of Medicine.

(m) This school was chartered in 1900. The Maryland Board of Medical Examiners refused to recognize the diplomas, but was compelled by a writ of mandamus to examine the graduates. The court ruled that, under the Maryland law, since the institution was legally incorporated, the equipment, curriculum, hours of study, etc., could not be considered. The character of the institution can further be seen by a perusal of its "Fifth Annual Commencement and Catalogue"; which was "Edited by the Rev. Dr. P. Thomas Stanford, A.M., M.D., D.D., LL.D., Ph.D., Vice-President." The sources of these multitudinous degrees are not given.

(n) This college was founded by a "Dr." Alfred Booth, who, April 7, 1893, was sentenced to the New York State Penitentiary for having sold a diploma to a reporter of the New York Herald. (Rauch.)

(o) These two institutions were organized by one George Dutton. Listed as fraudulent by the Illinois State Board of Health. (Rauch.)

(p) An attempt at reform in medical education. Preliminary science work, and a graded four-year course were required. (Rauch.)

(q) Present evidence seems to indicate that these were separate institutions, but they may have been one and the same.

(r) Operated by one "P. Ripley Bradbury, M.D." whose right name seems to have been Henry Freeland Bradbury. Listed as fraudulent by the Illinois State Board of Health. (Rauch.)

(s) Pronounced "disreputable" in 1890 by the Hudson County (N. J.) Medical Society. (Rauch).

(t) Reported as not recognized by the New York Board of Regents.

(u) The diplomas issued by this college were made legal by act of the New York legislature.

(v) In his 1891 report on medical education, page 131, John Rauch, at that time secretary of the Illinois State Board of Health, gives information which renders doubtful the reputability of this institution.

(w) Reported as not recognized by the Ohio State Board of Medical Registration and Examination.

(x) Also known as the Cincinnati Literary and Scientific Institute.

(y) The dean of this college was H. Warner Newby, a "graduate" of the Independent Medical College, a Chicago diploma mill. The secretary was R. S. Clymer, M.D. This school had "Correspondence Departments" at Union City, Michigan, and at Hatfield, Pennsylvania. Circulars were sent out advertising diplomas for $10 each, under the name of "shares of the Twentieth Century Health Association." The claim was made that "graduates of the Twentieth Century Medical College can practice anywhere in the United States without any interference by the State Board of Medical Examiners." (See Journal A. M. A., Oct. 1, 1904, page 990.)

(z) A printed circular sent out a few years ago says that this college was incorporated by the State of Colorado in February, 1904, "for the purpose of giving a complete course in medicine, at the college and by correspondence." The charter was filed in Pennsylvania April, 1904, and [illegible] Allentown. The charter was also filed in [illegible], and offices were opened at Sacramento. [illegible] at Detroit, Michigan, and at Philadelphia, Pennsylvania, as well as in Mexico and in London. There is a Hillside Sanitarium Co., Incorporated; a Thompsonian Health Association Sanitarium and a Hillside Sanitarium operating in connection and a Sanitarium at Carversville, Pennsylvania. The secretary and treasurer is given as R. S. Clymer, M.D. See note (y) above.

(aa) Said to have been an examining board only.

(bb) This name was coupled with that of the Medical Department of the University of Tennessee for the classes graduating to and including 1896.

(cc) Exposed by the Arkansas Medical Journal, Aug. 15, 1907, page 134. See Journal A. M. A., Oct. 19, 1907, page 1335. Recognition withdrawn by the Texas State Board of Medical Examiners in November, 1907.

(dd) Ten days after the charter for this institution was obtained, George M. Carey, a non-graduate in medicine, registered a diploma which he had issued to himself. (Rauch.) See also II-369.

(*Continued from page 591.*)

cine, Columbia, Mo ; University Medical College, Kansas City, Mo ;
Mec [illegible] Louis, Mo ; Wash-
ingt [illegible] is, Mo ; University
of [illegible] Omaha, Neb , Uni-
vers [illegible] N. Y.; University
and [illegible] , N. Y.; University
of [illegible] Hill, N. C ; Wake
For [illegible] , N. C.; University
of [illegible] ity, N. D ; Miami
Mec [illegible] llege of Physicians
and [illegible] n University, Cleve-
land, Ohio; Western Reserve University Medical College, Cleveland, Ohio; Starling-Ohio Medical College, Columbus, Ohio; State University of Oklahoma School of Medicine, Norman, Okla.; Meharry Medical College, Medi [illegible] ersity, Nashville, Tenn ; Vanderbilt [illegible] ment, Nashville, Tenn ; University Co [illegible] Va.; University of West Virginia Medical Department, Morgantown, W Va , Marquette University Medical Department (Milwaukee Medical College), Milwaukee, Wis ; University of Wisconsin College of Medicine, Madison, Wis ; Wisconsin College of Physicians and Surgeons, Milwaukee, Wis

The secretary-treasurer of the Association is Dr. Fred C. Zapffe, 1764 Lexington Street, Chicago.

SOUTHERN MEDICAL COLLEGE ASSOCIATION.

The following requirements for admission to the freshman year are exacted by the colleges belonging to this Association:

The student must possess a diploma of graduation from some literary or scientific institution of learning, or a certificate that he has passed the entrance examination to a university, or a certificate from some legally constituted high school The minimum preliminary education required by the Southern Medical College Association is a grammar school education and two years' successful attendance at a *recognized preparatory* school or a high school, or its equivalent, said equivalent to be determined by a superintendent of public instruction A student may be given one month from date of his admission to submit his certificate of qualification And if he fails to possess the requisite educational qualifications in one or more branches, he may matriculate and attend his first course of lectures, but must present the requisite certificate before matriculating in the second course, and all tickets or certificates in such cases must have the conditions printed plainly on the face of each

Colleges belonging to this Association are not to issue certificates of credit to any student who has not been in actual attendance on at least 80 per cent of a seven months' medical course, nor to allow advanced standing on credentials representing less than that amount of work No student is to be allowed to graduate unless he has been in actual attendance on at least 80 per cent. of a seven months' session immediately preceding said graduation

The following colleges are members:

Medical College of Alabama, Mobile, Ala ; Birmingham Medical College, Birmingham, Ala ; Medical Department University of Arkansas, Little Rock, Ark ; College of Physicians and Surgeons, Little Rock, Ark ; Atlanta College of Physicians and Surgeons, Atlanta, Ga ; Medical College of Georgia, Augusta, Ga ; Medical Department, University of Mississippi, Oxford, Miss.; Medical Department, Epworth University, Oklahoma, Okla.; Medical Department, University of Tennessee, Nashville, Tenn.; Medical Department, University of Nashville, Nashville, Tenn.; Memphis Hospital Medical College, Memphis, Tenn ; Chattanooga Medical College, Chattanooga Tenn ; Tennessee Medical College, Knoxville, Tenn ; Medical Department, University of the South, Sewanee, Tenn ; Medical Department, Fort Worth University, Fort Worth, Texas; Medical Department, Baylor University, Dallas, Texas; Medical Department, Southwestern University, Dallas, Texas

The secretary-treasurer is Dr. Lewis C. Morris, Birmingham, Ala.

AMERICAN INSTITUTE OF HOMEOPATHY.

The minimum requirements for entrance into the freshman class of all homeopathic medical colleges, as adopted in 1901, are, with abbreviation, as follows:

1 English Composition—Exercise on assigned theme, not less than 200 words Exercise in reading Exercise in correction of ungrammatical sentences

2 Mathematics—Arithmetical exercises in (a) vulgar fractions, (b) decimals (c) percentage, (d) proportion, (e) square and cube root, (f) weights and measures, (g) decimal system Mensuration—(a) Definition of terms, (b) exercises under the more fundamental rules

3 Geography—General facts about North America

4 History—General, with particular reference to human progress in art, science and letters (The examination to avoid exact dates and minor details)

5 Latin Language—(a) Grammar, (b) four books on Cæsar or its equivalent

The colleges recognized as in good standing by this organization are·

Hahnemann Medical College of the Pacific, San Francisco, Cal ; Denver College of Physicians and Surgeons, Denver Colo , Hahnemann Medical College, Chicago; Hering Medical College; Homeopathic Medical Department of the State University of Iowa; Southwestern Homeopathic College, Louisville, Ky ; Atlantic Medical College, Baltimore, Md , Boston University School of Medicine; Homeopathic Medical College of University of Michigan; Detroit Homeopathic College; College of Homeopathic Medicine and Surgery of University of Minnesota; Homeopathic Medical College of Missouri, Kansas City Hahnemann Medical College; New York Homeopathic Medical College; New York Medical College for Women; Cleveland Homeopathic Medical College; Pulte Medical College, Cincinnati; Hahnemann Medical College of Philadelphia

The secretary is Dr. Frank Kraft, 2055 East Nineteenth Street, Cleveland, Ohio.

NATIONAL CONFEDERATION OF ECLECTIC MEDICAL COLLEGES.

The following are the present minimum requirements for admission to colleges members of this Association:

1. A certificate of good moral character.

2. Diploma of graduation from (a) a four years graded high school, or (b) normal school, or (c) seminary, or (d) literary or scientific college, or (e) university, or (f) evidence of having passed the matriculation examination to a recognized literary or scientific college, or (g) a medical student's certificate secured by examination from a state medical board.

The following colleges are members of this Association:

American Medical College, St Louis, Mo ; Bennett College of Eclectic Medicine and Surgery, Chicago, Ill ; California Eclectic Medical College, Los Angeles, Cal ; Eclectic Medical College of the City of New York, New York, N. Y ; Eclectic Medical Institute, Cincinnati, Ohio; Georgia College of Eclectic Medicine and Surgery, Atlanta, Ga , Lincoln Medical College, Lincoln, Neb , Western Eclectic College of Medicine and Surgery, Kansas City, Kan

The secretary treasurer is John K. Scudder, M.D , 1009 Plum Street, Cincinnati, Ohio.

COLLEGE NOTES.

Colleges Merged.—During the past year several mergers of medical colleges have taken place. In Kentucky last summer *the Louisville Medical College and the Hospital College of* Medicine united, forming the Louisville and Hospital Medical College, and just recently this college and the Kentucky School of Medicine merged into the University of Louisville Medical Department. In Indiana, the Indiana Medical College merged into the Indiana University School of Medicine. In Minnesota the Minneapolis College of Physicians and Surgeons merged into the University of Minnesota College of Medicine and Surgery. In Ohio, the Medical College of Ohio and the Miami Medical College have united to form the Medical Department of the University of Cincinnati.

Colleges Discontinued.—Besides the seven medical colleges which have lost their identity through mergers during the year, seven colleges have suspended These are the International Medical Missionary College, Atlanta, Ga.; the Dearborn Medical College, Chicago; the Eclectic Medical College of Indiana, Indianapolis; the Baltimore University School of Medicine, Baltimore, Md.; the Michigan College of Medicine and Surgery, Detroit, the Physio Medical College of Dallas, Texas, and the Gate City Medical College of Texarkana, Texas

New Colleges.—Besides the new colleges formed by mergers as noted above, during the year two colleges have been established. These are the College of Medicine of the University of South Dakota and the College of Medicine of the University of Wisconsin The California Medical College of San Francisco, which was suspended in 1906, was reorganized at Los Angeles last fall under the name of the California Eclectic Medical College.

Medical Graduates Holding Baccalaureate Degrees.—Reports from the various colleges show that of the 4,741 medical graduates in 1908 at least 820, or 17.3 per cent, were also graduates of colleges of liberal arts as compared with 18 per cent last year.

Advance in Entrance Requirements.—There are 11 medical colleges which already require for admission two or more years of work in a college of liberal arts. These colleges and the dates when the requirement began are as follows:

College.	Began.
Johns Hopkins University, Medical Department........	1893
Harvard Medical School.	1900
Western Reserve University, Medical Department.....	1901
Rush Medical College	1904
University of California	1905
University of Minnesota, College of Medicine.	1907
University of Minnesota, Homeopathic Department	1907
University of North Dakota, College of Medicine	1907
University of Wisconsin, College of Medicine .	1907
Cornell University, Department of Medicine .	1908
Wake Forest School of Medicine	1908

Fifteen other medical colleges have definitely announced an increase in their entrance requirements to two or more years of work in a college of arts. These colleges and the dates when the requirement will become effective are as follows:

College.	Begins.
Yale Medical School	1909
George Washington University	1909
Northwestern University Medical School	1909
University of Kansas, School of Medicine	1909
University of Michigan, College of Medicine	1909
American Medical Missionary College	1910
University of Colorado School of Medicine.	1910
State University of Iowa, College of Medicine	1910
Drake University Medical College	1910
John A. Creighton Medical College	1910
College of Physicians and Surgeons of New York.	1910
Syracuse University Medical Department.	1910
University of Pennsylvania, Medical Department	1910
University of Utah, Medical Department.	1910
University of South Dakota College of Medicine	1910

The twenty-six following schools either already require one year of work in a college of arts devoted to physics, chemistry and biology, in addition to a four-year high school education, or have announced their intention to do so on or before the year given:

College.	In force.
University of Missouri, Medical Department	1906
University of Nebraska, Coll. of Med	1908
St. Louis University, Medical Department	1909
University of North Carolina, Medical Department	1909
Cooper Medical College	1910
Oakland College of Medicine and Surgery	1910
University of Southern California, Coll. of Med	1910
Georgetown University, Medical Department	1910
College of Physicians and Surgeons, Chicago	1910
Hahnemann Medical College, Chicago	1910
Indiana University, School of Medicine	1910
Tulane University of Louisiana	1910
College of Physicians and Surgeons, Baltimore	1910
University of Mississippi, Medical Department	1910
Washington University, Medical Department	1910
Medical College of Ohio	1910
Miami Medical College	1910
Starling-Ohio Medical College	1910
Cleveland Homeopathic Medical College	1910
Cleveland Coll. of P. and S	1910
University of Oklahoma, Medical Department	1910
University of Oregon, Medical Department	1910
University of Texas, Medical Department	1910
University of Virginia (3 years high school and 2 years University)	1910
University of West Virginia	1910
Wisconsin College of Physicians and Surgeons	1910

Practically all these schools have expressed their intention to require that the work in physics, chemistry and biology be taken in a college of liberal arts.

About twelve medical colleges expressed their intention to make this increase in preliminary requirements, some of which were omitted because they have made no mention of such in their printed announcements. The others were omitted because it was found by inspection they were not satisfactorily equipped to teach medicine.

State Board Requirements of Preliminary Education.—It should be noted that five state boards have adopted a requirement of one or two years' work in a college of liberal arts. These states are as follows:

State Examining Board of	No. of years Required.	Affects Students Matriculating.	Affects All Applicants After
Minnesota	2	1908-9	1912
Connecticut	1	1908-9	1912
North Dakota	2	1907-8	1911
South Dakota	1	1906-7	1910
Colorado	1	1908-9	1912

Educational Standards and Pseudomedical Colleges.

The following statements in regard to the various systems of pseudomedicine given by Dr. F. M. Crandall a few years ago show the necessity of having one standard of admission to the practice of medicine with no special standards or laws for different sects or systems. While the remarks[1] refer particularly to the situation in New York at the time that state was striving for their present medical practice act, they will apply equally well to the problems of other states:

"The most strenuous work of recent years has consisted of opposition to the demands of various systems of pseudomedicine. These systems are nothing more or less than levers and sledge hammers seized upon as the most effective means of breaking through the medical laws. And here we come upon a subject upon which there is much misapprehension. The medical laws are but a part of the general educational laws of the state. These laws are wide in their application, and cover many professions and diverse conditions. There is nothing exceptional in the laws covering medical practice. They are at the farthest possible remove from class legislation. They are simply a part of the great educational system of the state. The medical profession has upheld the hands of the state educational authorities, whose aim has been to enact a broad and consistent system of just and equitable laws. A state educational system has, therefore, been built up, of which the laws controlling medical practice are an integral part.

POSITION OF THE MEDICAL PROFESSION.

"The position of the medical profession is often misunderstood, and their arguments have frequently been misjudged. The opposition of physicians to attempts to destroy the medical laws is often attributed to a spirit of trade unionism. This is controverted by the single fact that no attempt is made by the profession to curtail the practice of medicine by competent men. It is one of the fundamental principles that every man and woman exhibiting proper qualifications should be admitted to practice. Our opposition to pseudomedicine is, and should be, educational, not professional. We do not try to raise barriers against practitioners because they use a special system or adopt certain remedial measures. We do not oppose certain prevalent isms because of their methods of treatment, but because they are new and very clever manifestations of the old, old scheme to get within the medical fold without expending the time and money necessary to make a competent practitioner. The various sytems of pseudomedicine are not pushed forward year after year with such determination because men so love this or that particular form of treatment, but because they offer the most promising means of evading the requirements of preliminary education, four expensive years in the medical college, a state examination, and then, perhaps, two years of unpaid service in a hospital. It is the educational question that is at the bottom of every one of these modern isms, and they are the more aggressive, as the educational barriers are raised higher. It is upon educational, not professional grounds that we oppose them.

TREAT ALL ALIKE; NO SPECIAL FAVORS.

"The medical profession approves the system which requires the same general professional education of all its members. The specialist upon the eye and the specialist upon the throat, the physician and the surgeon, must each undergo the same training and must pass the same state examination. One may select any specialty he chooses and may adopt any method of treatment which his educated judgment dictates. He may use large doses or small, massage or electricity. What the state requires for one body of practitioners it should not abate in favor of another.

AN ADEQUATE TRAINING REQUIRED.

"We have one sound reason for opposing these systems which permit an abbreviated education, and one argument that no man can gainsay. We may properly demand that every man and woman who enters upon the practice of the healing art should have adequate education. Here we are on ground that can not be misjudged or misrepresented. We ask no favors or special privileges. We are not the ones who are seeking to bring half-educated practitioners in by the back door. We simply ask equal requirements for all. Our position is, that those who seek to treat disease should go in through the same door, and a few should not be permitted to crawl in through holes and underground passages. We simply ask for an American square deal and equal rights for all."—*N. Y. and Phila. Med. Jour.*

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[1] Reprint, Journal of the Med Soc. of N. J., January, 1906, p. 247.

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SATURDAY, AUGUST 15, 1908.

MEDICAL TRAINING AND INTELLECTUAL INFLUENCE.

The recent issue of the life of Rabelais[1] in the French Men of Letters series, makes available in English an excellent study of the career of this famous physician, whose contributions to literature and to education stamp him as one of the leaders in thought of a period especially fruitful in eminent men. Everyone knows in general what a wonderful group of men made their appearance in Europe during the early sixteenth century, but not many realize how much the thinking of these men meant for the generations after them, even our own. Probably only those who have been especially interested in history appreciate that so many of the names we ordinarily consider among the greatest in the intellectual life of modern times are to be found in this period, and that not a few of them belong to men trained by medical study and practice. James Russell Lowell, using a medical simile, once said that a case of immortality in a family was so common during the sixteenth century in Europe, that like measles almost any family might expect to have one or more attacks of it. Though we are not apt to think of medicine as producing great men quite so early in modern history as this, there is probably no equal period in human history so crowded with them.

Rabelais was born in 1492, an important year for America, the one, also, which saw the birth of Paracelsus, who lived until about the middle of the sixteenth century. Rabelais' life, therefore, runs contemporary with the closing years of Columbus, the navigator, but also with those of another Columbus, to whom the Italians refer the discovery of the circulation in the lungs, and who was born at the beginning of the sixteenth century. A still more distinguished colleague was Vesalius, the "father of anatomy." Then there was Servetus, the first to publish a complete description of the pulmonary circulation, and many others of scarcely less note. Such men as Berengar, of Carpi, who first described the vermiform appendix, Varolius, Cæsalpinus, to whom the Italians attribute the discovery of the general circulation before Harvey, Sylvius, Fabricius, the teacher of Harvey—all were living during Rabelais' time. Medical science indeed, in our modern sense of the term, had its greatest uplift just at this period. It is not surprising then to find that a man who was educated in medicine at Paris, but received his doctorate degree at Montpellier, who had traveled in Italy and was acquainted with most of the great Italian discoverers, should have had the originality of mind to write in the form of a satire the most common sense ideas with regard to education that had ever been uttered up to this time.

It is because Rabelais represents the result of the medical influences of his time in molding his intellect, that he can scarcely help but be interesting to modern educated physicians. His work was unfortunately disfigured by many vulgarities, though that was the custom of the times, and as we well appreciate, manners are not morals, and a time that is very squeamish about its modes of expression may be far from circumspect in its actions. Rabelais contributed nothing to medicine itself and indeed seems to have practiced comparatively little. His philosophy of life and of education, however, can not fail to have been profoundly modified by his long and arduous medical studies, and his books undoubtedly represent what a trained physician of his time had to say about many subjects. If sometimes the language of them is couched in terms that suggest the physiology and pathology of human nature, rather than its intellectuality and spirituality, this will surely be passed over for the sake of the nucleus of profound thought which they contain and which the more serious study of the recent time has brought out so clearly.

Mr. Tilley emphasizes especially Rabelais' contribution to the science of education. "Rabelais' medical experience and the importance which he attached to health—'without health life is no life,'" he says in the prologue to the fourth book, "led him to pay special attention to the care of the body, while to his interest in science is due perhaps the most original contribution to the subject—his insistence on the cultivation of the powers of observation. On the whole his scheme (of education) is remarkable for its large mindedness, its good sense, its freedom from those fads and prejudices to which educationalists of all ages have been prone, rather than for any subtle or deep insight into the human mind."

While aiding in the simplification and perfecting of general education, Rabelais was not without suggestive hints for medical education. As might be expected of one living at a time when a certain exaggerated notion of the value of Greek contributions to every form of thinking was common, he suggested that students should devote themselves to the old-time masters of medicine, but he also insisted on the necessity for personal observation on the human body. In a famous letter from Gargantua to his son the following passage is noteworthy:

"Then go over again the books of Greek, Arabian and Latin physicians, not despising the Talmudists and

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[1] François Rabelais, by Arthur Tilley, A.M., Philadelphia, J. B. Lippincott Co., 1907

Cabalists; and by frequent dissections acquire perfect knowledge of the other world, the microcosm which is man." This colleague of the Renaissance is evidently deserving of more than the attention that certain objectionable features of his works now bring him.

CATARRHAL JAUNDICE.

The pathogenesis of icterus has been a continually debated subject, and although there is now general acceptance of the view that in nearly all, and perhaps in all cases, there is some form of obstruction to the escape of bile, yet the mechanism and cause of the obstruction are not always clear. If the icterus is transient and not accompanied by severe constitutional symptoms the usual assumption is that an inflammatory process in the duodenum has extended into the ampulla of Vater, which becomes closed either by the swelling of the mucosa or by a plug of thick mucus, hence the term "catarrhal jaundice." The general acceptance of this view is probably due to the observation by Virchow in a case of this kind that came to autopsy, in which it was found that a duodenal inflammation had extended along the bile ducts to the liver, and had resulted in the formation of a mucus plug in the ampulla which was sufficient to withstand the feeble pressure of the bile. A few others, among them Osler, have observed similar conditions in "catarrhal jaundice."

Opportunities to examine thoroughly at autopsy the conditions existing in so-called catarrhal icterus without complicating processes are of necessity rare, because of the mildness of the results of the uncomplicated disease, and hence our exact knowledge on this subject is as inconsiderable as our speculations have been extensive. Eppinger[1] recently secured such an opportunity, and the results of his studies are very interesting and suggestive. A girl of 19 was examined clinically on the eighth day of what was a typical attack of catarrhal icterus, with the usual history of the jaundice following an acute gastroenteritis from dietary causes. On the following day she fell from the third story of a building and was instantly killed. The gall tracts were found somewhat distended, and pressure on the gall bladder did not force the bile through the ampulla into the duodenum. Microscopic study of the part of the common duct which lies within the wall of the intestine showed that the very complete occlusion was due to a hyperplastic condition of the lymphoid tissue of the mucosa of the duct. Study of normal specimens showed that, normally, there are *islands of lymphoid tissue* in the wall of the duct, surrounding the submucous glands, and developed to varying extent in different specimens. This lymphoid tissue with the embedded mucous glands is believed by Eppinger to be analogous to the tonsils, and located at the end of the bile tract as a means of defense against bacterial invasion from the intestine. Just as with the tonsils, this adenoid tissue is subjected to anginal attacks with swelling, which result in occlusion of the duct and jaundice. On this basis epidemics of catarrhal jaundice may be considered as analogous to epidemics of tonsillitis, and the tendency of some young people to attacks of transient jaundice without evident cause may be ascribed to a "lymphatic constitution."

These observations fall into line with the views of those who hold that the rich lymphoid apparatus of the vermiform appendix indicates a relationship of this organ to the tonsils, and that anginal swelling of the circularly disposed lymphoid tissue of the appendix may be a cause of acute appendicitis through the occlusion of the lumen and the interference with blood supply. Eppinger does not imply that all cases of transient icterus are due solely to lymphoid hyperplasia, for there can be no doubt that acute inflammatory processes do extend from the duodenum along the common duct and lead to simple inflammatory swelling, or to over-secretion of mucus with resulting occlusion; nevertheless, the suggestion that angina-like attacks of lymphoid swelling may be a cause of some of the epidemic forms of jaundice, and as an explanation of the particular tendency of certain individuals to icteric attacks, contains much that seems reasonable and suggestive.

STATES, MUNICIPALITIES AND MEDICAL EDUCATION.

For many years certain states have had medical departments connected with the state universities. The opinion that the proper training of physicians is a function which the state should assume has been rapidly spreading, since of the twenty or more state universities which now have medical departments no less than nine have been established during the last five years. During this same time, state legislatures have made large appropriations for medical buildings, equipment and hospitals. It now appears that a large city is about to assume a like responsibility. Three cities have long supported colleges of liberal arts which were under city control and largely supported by municipal taxation, these being the College of Charleston, South Carolina, opened in 1791; the College of the City of New York, opened in 1849, and the University of Cincinnati, opened in 1874. None of these institutions, however, has had medical departments until the one recently established in the University of Cincinnati by the merger of the Medical College of Ohio and the Miami Medical College, as announced a few weeks ago.[1]

The recent session of the Ohio legislature authorized Cincinnati to appropriate funds for building and equipping the colleges of the university, including the medical, in the discretion of the mayor and the city council. The management of all the scientific work of the hospitals of the city has been placed in the hands of the university by the board of public service and now that the two medical colleges above referred to have united in the university, the entire medical service of the city hospital will be placed under the direction of the university. A large new city hospital is being erected and the university has already taken steps to erect medical college buildings in connection with the hospital. The pathologist of the city hospital will also be the professor of pathology of the new medical school.

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[1] Wien. klin. Wchnschr., 1908, xxi, 480.

[1] The Journal A. M. A., July 11, page 152.

Cincinnati occupies a unique position, therefore, in both controlling and supporting a medical college. That city is planning to put its medical college on a high plane and will then make it responsible for the proper care of the city patients. Under the circumstances it seems to be an advantageous arrangement not only for the city and for the sick poor, but for medical education as well. The future development of the new medical college at Cincinnati will be watched with interest.

MEDICAL EDUCATION IN THE UNITED STATES.

STATISTICS FOR THE COLLEGE YEAR 1907-8.

The tabulated statistics herewith presented (pages 586 to 591) are for the year ending June 30, 1908, and are based on signed reports received directly from the medical colleges, or from other reliable sources. We wish here to acknowledge the courtesy and cooperation on the part of the medical colleges which have made the compilation of these complete statistics possible.

STATISTICS OF COLLEGES.

On pages 586 and 587 is Table 1, which gives all the colleges in session during 1907-8, the population of the city in which each college is located, the number of students, men and women, registered during the year, the number of 1908 graduates, men and women, the number of teachers for each college and the number of weeks of actual work in the college year. Beginning on page 575 are given essential facts of all medical colleges, arranged by states, and on pages 585, 590, 591 and 603 will be found the requirements of the different college associations, together with lists of colleges belonging to these organizations.

NUMBER OF MEDICAL STUDENTS.

The total number of medical students (matriculants) in the United States for the year ending June 30, 1908, was 22,602, a decrease of 1674 below 1907, and a decrease of 2,602 below 1906. It is the lowest number since THE JOURNAL began compiling these statistics in 1900. Of the total number of students, 20,936 were in attendance at the regular schools, 891 at the homeopathic, 479 at the eclectic, 90 at the physiomedical, and 206 at the unclassifiable schools. The attendance at the regular schools shows a decrease of 1,367 below that of last year, of 2,180 below 1906, and of 3,183 below 1905. In the homeopathic schools there was a decrease of 148 below the attendance of 1907, of 194 below 1906, and of 213 below 1905. The eclectic schools show a decrease of 66 since 1907, of 165 below 1906, and of 99 below 1905. The physiomedical colleges had 90 this year as compared with 97 in 1907, 110 in 1906, and 114 in 1905.

TABLE 5.—MEDICAL COLLEGE ATTENDANCE.

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med.	Nondescript.	Total.
1880.......	9,776	1,220	830	....	....	11,826
1890.......	13,521	1,164	719	....	....	15,401
1900.......	22,710	1,909	552	....	....	25,171
1901.......	23,846	1,683	634	80	144	26,417
1902.......	24,878	1,617	765	91	150	27,501
1903.......	24.971	1,498	848	125	173	27,615
1904.......	23,662	1,309	1,014	123	234	28,142
1905.......	24,119	1,104	578	114	232	26,147
1906.......	23,116	1,085	644	110	249	25,204
1907.......	22,303	1,039	545	97	292	24,276
1908.......	20,936	891	479	90	206	22,602

GRADUATES.

The total number of graduates for the year ending June 30, 1908, was 4,741, a decrease of 239 below 1907, of 623 below 1906, and of 859 below 1905. The percentage of graduates to matriculants was 21.0, as compared with 20.5 in 1907, and 20.5 in 1906. The number graduated from the regular schools was 4,370, or 221 less than in 1907 and 471 less than in 1906. From the homeopathic colleges there were 215 graduates, or 10 less than 1907 and 71 less than in 1906. The eclectic colleges graduated 116, or 7 less than last year and 70 less than in 1906. The physiomedical schools had 12 graduates this year as compared with 11 last year and 22 in 1906.

TABLE 6.—MEDICAL COLLEGE GRADUATES.

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med.	Nondescript.	Total.
1880.......	2,763	380	188	....	....	3,241
1890.......	3,853	380	221	....	....	4,454
1900.......	4,715	413	86	....	....	5,214
1901.......	4,879	387	148	18	12	5,444
1902.......	4,498	336	138	16	11	4,999
1903.......	5,088	420	149	24	17	5.698
1904.......	5,190	371	146	20	20	5,747
1905.......	5,126	276	153	22	23	5,600
1906.......	4,841	286	186	22	29	5,364
1907.......	4,591	225	121	11	32	4,980
1908.......	4,370	215	116	12	28	4,741

WOMEN IN MEDICINE.

During the past year there were 835 women studying medicine, or 3.7 per cent. of all medical students as compared with 3.8 per cent. in 1907. There were 185 women graduates this year, or 3.9 per cent. of all graduates. In 1907 there were 928 women students and 211 graduates, while in 1906 there were 895 women students and 233 graduates. Of all the women matriculants, 186 (22.3 per cent.) were in attendance at the three medical colleges for women, as compared with 210 (22.6 per cent.) in 1907, and 189 (21.0 per cent.) in 1906. From the three women's colleges there were 46, or 24.9 per cent. of all women graduates as compared with 39 (18.5 per cent.) in 1907. The remaining 649 (77.7 per cent.) were matriculated in coeducational colleges.

TABLE 7.—Women in Medicine.

Year.	Total women students.	Percent. of all students, both sexes.	Total women graduates.	Percent. of grads., both sexes.	Women's colleges.	Students.	Percent. of all women students.	Graduates.	Percent. of all women graduates.	Co-ed. schools.	Students.	Percent. of women students.	Graduates.	Percent. of all women graduates.
1904	1,129	4.3	244	4.0	3	183	16.2	56	23.0	97	946	83.8	188	77.0
1905	1,073	4.1	219	4.0	3	221	20.6	54	24.5	96	852	79.4	165	75.5
1906	895	3.5	233	4.3	3	189	21.0	33	14.1	90	706	79.0	200	85.9
1907	928	3.8	211	4.2	3	210	22.6	39	18.5	86	718	77.4	172	81.5
1908	835	3.7	185	3.9	3	186	22.3	46	24.9	88	649	77.7	139	75.1

NUMBER OF COLLEGES.

During the past year seven colleges (mentioned on page 603) have been suspended and seven lost their identity through mergers. Three new colleges were formed by the merging of others, however, and two new colleges were established, making a net decrease of nine colleges since last year, the total now being 152. The regular schools number 123, a decrease of eight since last year. The homeopathic schools number 16, a decrease of 1. The eclectic colleges have 8, the same number as last year, and the physiomedical colleges have decreased by one, there being now only 2, while there are now 3 nondescript schools which offer to teach all systems of medicine.

TABLE 8.—Medical Colleges.

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med.	Nondescript.	Total.
1880	72	12	6	....	....	90
1890	93	14	9	....	....	116
1900	121	22	8	....	....	151
1901	124	21	10	2	2	159
1902	121	20	10	3	1	155
1903	121	19	10	3	1	154
1904	133	19	10	3	1	160
1905	129	18	9	3	1	160
1906	130	18	9	3	1	161
1907	131	17	8	3	2	161
1908	123	16	8	2	3	152

LENGTH OF TERMS.

The length of the terms of the same colleges fluctuates somewhat from year to year, but on the whole there has been a lengthening of college terms. This has reference to the weeks of actual work, exclusive of holidays. Only 2 colleges this year report sessions shorter than twenty-seven weeks, as compared with 6 in 1907 and 14 in 1906. In 1901 there were 58 which held sessions of less than twenty-seven weeks. Of those having sessions of twenty-seven or twenty-eight weeks, the number is 21 this year, or 6 less than last year, and 25 less than in 1903. There are now 26 colleges claiming courses of twenty-nine or thirty weeks of actual work, or 2 more than in 1907, and 51 claiming courses of thirty-one or thirty-two weeks, or 9 more than 1907. Forty-six colleges require from thirty-three to thirty-six weeks, a decrease of 12 since last year. The 4 colleges claiming courses longer than thirty-six weeks are night schools. It would apparently require twelve or fourteen years of the usual night school study, however, to secure the equivalent of four years of thirty weeks each in our better day colleges. Omitting the four night colleges there are 97, or 63.8 per cent. of all colleges, which claim more than thirty weeks of actual work as compared with 100, or 62.1 per cent. of all colleges in 1907.

TABLE 9.—College Terms.

Year.	23 to 26 weeks.		27 to 28 weeks.		29 to 30 weeks.		31 to 32 weeks.		33 to 34 weeks.		35 to 36 weeks.		Ov. 36 weeks	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
1901	58	36.5	42	26.4	8	5.0	26	16.4	4	2.5	18	11.3	3	1.9
1902	44	28.4	41	28.4	11	7.1	33	21.3	3	1.9	18	11.6	2	1.3
1903	33	21.4	46	29.9	15	9.7	37	24.0	2	1.3	19	12.4	2	1.3
1904	27	16.3	44	26.5	22	13.3	37	22.3	13	7.8	20	12.0	3	1.8
1905	15	9.4	35	21.8	12	7.5	44	27.5	13	8.1	38	23.8	3	1.9
1906	14	8.7	35	21.7	26	16.1	32	19.9	24	14.9	28	17.4	2	1.3
1907	6	3.7	27	16.8	26	16.1	42	26.1	29	18.0	29	18.0	2	1.3
1908	2	1.3	21	13.8	28	18.4	51	33.6	24	15.8	22	14.5	4	2.6

POPULATION OF COLLEGE CITIES.

Of the 144 colleges that had graduates 96, or 66.7 per cent., are located in cities of 100,000 or greater population and these colleges had 3,650, or 77.2 per cent. of all graduates of 1908, while the 48 schools located in cities of less than 100,000 had 1091, or 22.8 per cent. of all graduates. In cities of less than 50,000 there are 31 medical colleges which had 595 graduates in 1908, while 8 colleges having 144 graduates in 1908 are located in cities having less than 10,000 population.

DISTRIBUTION OF MEDICAL STUDENTS.

Table 2 on pages 588 to 591 shows from what states the students come who were in attendance at each medical college during the session of 1907-8. The influence of the proximity of the medical school is seen in the fact that states having medical colleges contribute more students in proportion to the population than those which have no colleges. A comparison of this table with the large tables based on state board examinations,[1] which show the distribution of the alumni of each college, is interesting. The college which has a widely distributed alumni has also a student body from an equally large number of states.

Only two states contributed over 2,000 students each this year, these being New York with 2,116 and Pennsylvania with 2,104. Illinois, which last year contributed 2,126, contributed only 1,749 this year. The next states in the order of the number of students contributed are Missouri, 919; Ohio, 912; Texas, 874; and Massachusetts, 860. Three states had less than 20 each, these being Wyoming, 6; Nevada, 8, and New Mexico 11.

MEDICAL STUDENTS AND GRADUATES FOR EIGHT YEARS.

Table 3, on pages 592 and 593, shows the students and graduates for each college for each of the past eight years, as well as the totals of students and graduates and the average proportion of graduates to students. Many interesting points are brought out by this table. The fluctuation in the attendance on each college is shown and in some of the leading colleges the time when changes in entrance requirements were made are indicated by marked fluctuations in the number of students.

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[1] Journal A. M. A., May 30, 1908, pages 1848 to 1863.

PROPORTION OF GRADUATES TO MATRICULANTS.

The proportion of graduates to matriculants is especially interesting. If a college continued a three-year course, about one-third or 33.3 per cent. of the entire student body would graduate each year, the other 67 per cent. being supposedly in the junior and middle classes. For the four year course with its four classes, one class, or about 25 per cent. of all matriculants, would graduate each year. This would be the percentage, doubtless, for each college at the present time if every student who matriculated in a college remained in that college four full years and then graduated. There are numerous factors, however, which tend to alter the percentages of graduates of each college.

The average proportion of graduates to matriculants each year for all colleges is 20.4 per cent., instead of 25, which shows that only about 4 out of every 5 students who matriculate continue until they graduate. In this number which do not graduate may be included those who go into other lines of activity, those who take special courses, and those deceased.

CAUSES OF FLUCTUATION IN PERCENTAGES.

The percentages of the individual colleges fluctuate for various causes. A high-grade college located in a small city may have many matriculants and yet have a low percentage of graduates, showing that the students seek the larger cities for their final or clinical years in medicine. This would also result in a higher percentage of graduates for colleges in the large centers of population. The percentage of graduates is seen to be low for colleges in Arkansas and other states where undergraduates are allowed to take the state examination for license to practice medicine. There are 20 colleges for which the average percentage of graduates each year was less than 15 per cent. of all matriculants and four of these had less than 10 per cent. of graduates each year.

Eighteen colleges had an average percentage of graduates each year of over 25 per cent. and four of these graduated over 30 per cent. of all matriculants, two of these schools being in Chicago and two in Baltimore, the percentages of these being 31.1, 31.4, 33.6 and 33.9.

Only four colleges had over a thousand graduates in the eight years, these being the College of Physicians and Surgeons of Chicago, 1,533; Jefferson Medical College, Philadelphia, 1,208; Rush Medical College, Chicago, 1,152, and the College of Physicians and Surgeons of New York, 1,147. There are 21 medical colleges which had over 500 graduates in the eight years, while there are 34 colleges which had less than 100 graduates. This does not include the colleges not granting medical degrees, nor a number of colleges which have become extinct, and which have been grouped with "miscellaneous colleges."

LIST OF EXISTING AND EXTINCT MEDICAL COLLEGES.

Table 4, on pages 594 to 602, gives a complete list of all colleges existing and extinct. Part I gives the existing colleges, the year when each was organized under its present title, the year the first class graduated, the years, if any, when no classes graduated, reference to previous titles if there were such, the name of the dean or secretary, and the dates when the next session begins and ends. Part II gives all colleges which are extinct, or which have ceased to exist under the title given, together with the year each was organized, the year the first class was graduated, the years, if any, when no classes graduated, the year when the last class graduated, the year when the school ceased to exist, and reference to any other titles. By means of these tables an institution's life history under several titles can be readily traced. For example, Part II, No. 85, is the Central College of Physicians and Surgeons, which was organized in 1879, the first class graduated in 1880, and classes were graduated in all subsequent years to and including 1905, when it merged with (II, 103) the Medical College of Indiana to form (II, 99) the Indiana Medical College which in turn graduated classes in 1906, 1907 and 1908, when it merged in (I, 138) the Indiana University School of Medicine.

FRAUDULENT COLLEGES.

In the "remarks" column reference is made to all schools which have been reported as fraudulent, or disreputable, or to other items which are important. Where further description has been necessary letters in brackets (a), (b), etc., have been added, which refer to footnotes giving such description.

The list contains the names of many colleges regarding which complete information has not been received and which may be unobtainable. If any of our readers can help us complete the data, we will be under great obligations.

FORMER SOURCES OF INFORMATION.

The chief sources of information regarding medical colleges of the United States prior to 1890 are the invaluable reports issued under the direction of Dr. John Rauch, who was then secretary of the Illinois State Board of Health. The United States Bureau of Education's reports since 1890 have contained fairly complete lists of medical schools together with much important data. Reports of the New York Education Department likewise furnish much valuable information. Beginning with and since the college session of 1900-1901, THE JOURNAL has been publishing complete statistics, to which, since 1905, have been added the special researches of the Council on Medical Education.

COLLEGE MERGERS AND THE KENTUCKY PROBLEM.

Eighteen months ago Louisville had five regular medical colleges—the Hospital College of Medicine, the Kentucky School of Medicine, the Kentucky University Medical Department, the Louisville Medical College, and the University of Louisville Medical Department. A year ago the Kentucky University Medical Department merged into the University of Louisville and a little later the Louisville Medical College and the Hospital College of Medicine merged under the name of the Louisville and Hospital Medical College. Thus there remained three colleges which have since[1] merged, retaining the name of the University of Louisville Medical Department. In an effort to have the college thus formed become the Medical Department of the Kentucky State University, a conference was held July 17 in Lexington with the trustees of the Kentucky State University.[2] At this conference objection was made to having a medical department in any city other than the seat of the university. This is the same difficulty which came up with the universities of California, Kansas, Maine, Nebraska, North Carolina and Indiana in establishing their medical departments, as well as in the establishment of a medical department of Cornell University in New York City. In California, Kansas, Maine, Nebraska and North Carolina the problem was solved by offering the first two years of the medical course at the seat of the university and the clinical years in the largest city in each state. Cornell University adopted the plan of giving the work of the first two years both at Ithaca and at New York City, but all the clinical work was to be taken at the latter place. Indiana University followed the Cornell plan and the student may take the first two years either at Bloomington or Indianapolis, but his clinical years must be taken at Indianapolis. In all these mergers, the results of which have been favorably reported, the advantage of having the clinical work at the largest city in the state seems to have more than offset the disadvantage of having a part or all of the medical work in a city other than the seat of the university.

CHOLERA IN THE VOLGA VALLEY.

A recent press report of the outbreak of cholera involving the valley of the Volga from Nijni Novgorod to the mouth of the river, indicates the vast progress made during recent years in the care of the public health. We learn that isolation hospitals have been established along the river, and a floating hospital and inspection steamers are commissioned. The local quarantine method will not be adopted, but isolation of patients, attendants, contacts and suspects will replace it. Measures such as these, as we found in the last New Orleans yellow fever epidemic, are calculated to allay rather than to excite panic—and panic itself, by depressing the vitality, becomes a predisposing cause, thus tending to increase the epidemic in both extent and severity. It is not surprising to learn that with such enlightened measures, even the superstitious Russian peasantry, who on former occasions, by their hostility toward the medical officers, have added to the natural difficulties attendant on an epidemic, are now learning to cooperate with the authorities.

Medical News

DISTRICT OF COLUMBIA.

Tuberculosis Camp.—An open-air tuberculosis camp was opened by the American Red Cross Society on the grounds of the new Tuberculosis Hospital, August 8. The camp is well equipped and is in charge of the Visiting Nurses' Society.

Postage on Medicine.—By a decision of the postmaster general, packages of medicine bearing written directions for taking are subject to the first-class rate of postage on the ground that written directions are not permissible additions to fourth-class mail matter under the law.

Health Report.—The weekly health and mortality record for the week ended August 1 shows that there were 116 deaths, of which 61 were white and 55 colored. Of the 119 births, 77 were white and 42 colored. The number of cases of measles decreased from 103 to 56, and those of chicken-pox from 163 to 34. Typhoid fever shows an increase, there being 33 new cases and 6 deaths.

New Assembly Hall.—Work has been commenced on a new assembly hall at the Government Hospital for the Insane. The building is designed to provide modern facilities for theatrical productions and other entertainments and to afford proper quarters for religious worship. The building will be completed about June 1, 1909, at an approximate cost of $96,000. The seating capacity of the amusement hall will be 1,000.

New Hospital Opened.—The Municipal Tuberculosis Hospital at Fourteenth and Varnum Streets, N.-W., Washington, was opened June 27 by a public reception. Dr. Percy G. Smith, superintendent of the hospital, headed the reception committee. The hospital has cost about $100,000 and will accommodate 120 patients. An innovation in tuberculosis hospital construction in this institution is the idea suggested by Dr. George M. Kober of putting the open wards on the upper story instead of grouping them round the base of the building.

ILLINOIS.

Hospital Dedicated.—The new St. James Hospital, Pontiac, erected at a cost of about $100,000, was dedicated July 19 with appropriate ceremonies.

Tuberculosis Infirmary Plans Approved.—The plans for the tuberculosis infirmary on the grounds of Cook County Hospital have been approved by the county board. The building is to be 158x124 feet, five stories in height for the main building and four stories in height for the wings. The top floor of the former and the roofs of the latter are to form sun parlors and exercising grounds for the patients. The building is estimated to cost $300,000, and will accommodate 320 patients.

Tuberculosis Exposition.—The Peoria Society for the Prevention of Tuberculosis, with the aid of the national society, held a tuberculosis exposition at Peoria, July 27 to August 6, inclusive, at which there was an average attendance of nearly 700 a day. Each evening lectures were given and lantern slides shown. Among the interesting features were maps showing the location of each death from tuberculosis for the last 15 years, and daily exhibits showing the amount of tuberculous meat condemned at the local slaughter-houses by government inspectors. Dr. Sumner M. Miller is president of the society, and Dr. Jay H. Bacon, secretary.

Chicago.

Free from Smallpox.—For the first time this year the Isolation Hospital is reported as having no tenant, and it is now undergoing a thorough disinfection.

Children of the Poor Healthy.—It is reported that out of 16,586 children examined by the 78 medical inspectors of the health department since July 20 only 281 were found to be ill.

Communicable Diseases.—During the week ended August 8, 264 cases of communicable disease were reported, distributed as follows: Diphtheria, 51; scarlet fever, 40; measles, 15; chickenpox, 10; typhoid fever, 76; whooping cough, 40; pneumonia, 10; tuberculosis, 25, and diseases of minor importance, 6.

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[1] The Journal A. M. A., Aug. 8, p. 506.

[2] The Journal A. M. A., July 25, p. 325

Deaths of the Week.—The total number of deaths from all causes for the week ended August 8 was 657, or 47 more than for the preceding week and 11 more than for the corresponding week of last year. Of the deaths 212 were caused by acute intestinal diseases; 48 by tuberculosis; 41 by violence (including suicide); 36 by nephritis, and 35 by heart disease.

Hot Weather Care of Children.—The Chicago department of health has issued a circular entitled "Hot Weather Care of Children," in which the important features of instruction are as follows: Avoid overfeeding; avoid improper foods; avoid improper milk; avoid pacifiers; give baby a drink of water; avoid heavy clothing; keep baby in open air; give baby bath; let baby sleep alone, and do not drug the baby.

Personal.—The degree of D.Sc. was conferred on Dr. John B. Murphy by Sheffield University at the recent meeting of the British Medical Association.——Dr. Carl Beck returned from Europe July 29.——Dr. Hyman Cohen has been appointed chief disinfector of the health department, vice Dr. Charles W. Behm, deceased.——Dr. Eugene O. Christoph has resigned from the staff of St. Bernard's Hospital.——Dr. and Mrs. Walter H. Allport have sailed from Liverpool on their return from Europe.

Hospital Notes.—The outdoor performance at Ravinia Park last week netted a little more than $1,000 to the funds of the Tribune Summer Hospital.——An addition to cost $200,000 is to be made to the Hospital of St. Anthony of Padua. The principal addition will be a five-story fireproof building 112x50 feet.——The building and land for Iroquois Memorial Emergency Hospital No. 1 has been acquired at 87 Market Street. The land has been leased for ninety-nine years at an annual rental of $1,800, and the three-story building on the lot will be remodeled for hospital purposes at an expense of from $10,000 to $25,000.

Visit to Ottawa Tent Colony.—On August 2 a party of about 80 members of the Chicago Medical Society, and ladies, accepted the invitation of Drs. James W. Pettit and Everett H. Butterfield, medical directors of the Ottawa Tent Colony for Tuberculosis, to make a visit of inspection and entertainment. After investigation of the colony near Ottawa, a picnic lunch was served on the bluff before the river trip to Horseshoe Canyon and Starved Rock, at which dinner was served. Other points of historic or esthetic interest were also visited, and the party returned to Chicago the same evening.

Hospital Notes.—By a baseball game July 22 more than $1,000 was netted for the Chicago Union Hospital.——The Deaconess Training School and Wesley Hospital have each been bequeathed $1,000 by the will of the late Mrs. Eugenia Shumway, Polo.——The Chicago Tuberculosis Sanitarium at Winfield, on an elevation fronting the DuPage River, will be open in about six weeks. Dr. Theodore Sachs will head the medical staff, and the institution is being established under the auspices of the women of the Chicago Jewish Club.——Cook County Hospital has acquired a strip of land 16 feet wide and 550 feet long for $9,720, and by this purchase is now the owner of the entire block on which the hospital is located.

INDIANA.

Charges Withdrawn.—The charges filed before the State Board of Medical Registration and Examination against J. W. White, Indianapolis, by Dr. Hugh A. Cowing, Muncie, were withdrawn July 14. Dr. White was charged with giving aid to an illegal practitioner known as "the boy wonder"; and the reason for the withdrawal of the charges is said to be that this individual has left the city.

Sanitary Association Organized.—The Indiana Sanitary and Water Supply Association, affiliated with the State Board of Health, was organized July 18 at Indianapolis by superintendents of water works, water chemists, health officers and members of the State Board of Health. H. E. Barnard, state water commissioner, was elected president, and Frank Jordan of the Indianapolis Water Company, secretary. The purpose of the organization is to study the source of the public water supplies, their preservation, conservation and purification, and to work for advanced legislation looking to that end.

Licenses Revoked.—The State Board of Medical Examination and Registration is said to have revoked the licenses of Dr. W. P. Hacker, Bloomington, and Dr. McKendree Green, Pleasant Lake, on the ground that they had been writing prescriptions for the purchase of intoxicating liquors, without first making examination of the individuals to whom such prescriptions were issued.——The State Board of Medical Registration and Examination, at its meeting July 16, issued an order revoking the license of Herman Reiss, Hammond, to practice medicine. It is charged that Reiss obtained his license in an irregular manner, and had failed to present his license for cancellation as agreed.

MISSOURI.

Tuberculosis Dispensary Opened.—A free dispensary for the treatment of tuberculosis was opened in the Post-Graduate Hospital, Kansas City, July 13. There will be clinics three days in the week, at which physicians and nurses will be in attendance; and in addition arrangements have been made to have visiting nurses and representatives of the Associated Charities visit homes of patients.

Circulating Medical Library.—The library of the University of Missouri has made arrangements whereby members of the State Medical Association may have access to books in the library. On making application to the librarian, books will be sent to the applicant, who has to pay charges of transportation in towns where there is no public library; in towns which have libraries the books will be sent through the library.

Personal.—Dr. William Bayliss, superintendent of the Missouri State Sanatorium for Incipient Tuberculosis, has resigned and Dr. Orville H. Brown, physician-in-charge, has been placed in full charge of the institution pending further action by the board of directors.——Dr. Edmund A. Donelan, St. Joseph, celebrated his eighty-fourth birthday, July 9. The local medical society made the occasion memorable by presenting Dr. Donelan with a handsome leather rocking chair.——Dr. and Mrs. Thomas C. Allan, Bernie, have returned from a vacation trip to Colorado, Mexico and the Pacific Coast.

St. Louis.

Proposed Health Building.—The Society for the Promotion of Health, St. Louis, proposes to erect a health building in University City to cost $300,000. The building will contain offices, furnished free of charge, for all societies engaged in the fight against tuberculosis, and will have an auditorium with a seating capacity of 5,000, which is to be offered, rent free, in the interest of philanthropic movements.

Medical Practice Act Not Retroactive.—Judge Kinzie of the Circuit Court has declared that that portion of the Medical Practice Act which authorizes the State Board of Health to revoke licenses is not retroactive. This opinion was rendered in the case of Dr. Edward J. Hogan, whose license was revoked in 1906, on the charge of unprofessional conduct, before the new law allowing appeal to the Circuit Court went into effect.

Personal.—Drs. Edward and Henrietta A. S. Borck sailed for Europe from Baltimore, July 8.——Drs. Samuel T. Bassett, Samuel T. Lipsitz, Albert Vogel, C. M. Barr and Frank L. Whelpley have been appointed junior physicians at the State Hospital.——Dr. Bradford N. Robinson has been appointed assistant junior physician at the Female Hospital.——Dr. F. W. Klocke has been appointed junior physician at the City Hospital.

Maternity Hospital.—The Maternity Hospital is now established in its new quarters, 2521 Locust Street. In addition to the charity ward there are a number of private rooms. The medical staff consists of Dr. Davis Forster, physician-in-chief; Dr. Frank Hinchey, alternate; and Dr. Harry D. Carley, assistant. The consulting staff is composed of the following physicians: Dr. John C. Morfit, president; Dr. John Young Brown, vice-president; Dr. Davis Forster, secretary; and Drs. Alonzo R. Kieffer, Edwin R. Meng, William H. Stauffer, John Green, Paul Y. Tupper, Eugene T. Senseney, J. O'Fallon Farrar, Leo C. Huelsman, Amand Ravold and Cyrus E. Burford.

NEW YORK.

New York City.

Vanderbilt Clinic to Become a Dispensary.—Plans have been filed for remodeling the Vanderbilt Clinic of the College of Physicians and Surgeons into a dispensary. The projected improvements are to cost $20,000.

New Milk Distributing Headquarters.—A new headquarters and laboratory for the Nathan Straus milk distribution philanthropy will be opened in East Thirty-second Street. The building is a three-story building, constructed of marble and tiles and fitted with all modern appliances for serving pure milk.

Insanity on the Increase.—State Commissioner in Lunacy S. T. Viele says that the average increase in insanity for the last ten years is 717 cases a year. Last year the increase was about 750. This year he expects it will be at least 1,000. Most of this increase is from the city of New York and vicinity.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended August 1, 461 cases of tuberculosis, with 154 deaths; 187 cases of diphtheria, with 17 deaths; 153 cases of measles, with 11 deaths; 123 cases of scarlet fever, with 4 deaths; 76 cases of typhoid fever, with 13 deaths; 29 cases of whooping cough, with 4 deaths; 12 cases of cerebrospinal meningitis, with 11 deaths; and 14 cases of varicella, a total of 1,055 cases and 214 deaths.

Sanitary Work Effective.—There has been a marked decrease in the mortality among children for the week ended August 1. The Conference on Summer Care of Babies which brought about a cooperation of the institutions engaged in work among the poor on the East Side attributes this reduction to unity in effort, and asserts that 872 babies might be saved if the whole city should gain as Brooklyn has. There the number dropped in two weeks from 151 to 91. The number of deaths in the tenement houses for the last week in July was 968 in 1907 and 649 in 1908.

OHIO.

Society Meetings.—Physicians of the South Side, Columbus, at a meeting recently held, organized the South Side Physicians' Association, with the following officers: President, Dr. Myron T. Dixon; vice-president, Dr. Herman C. Hoppe; secretary, Dr. D. R. Williams, and treasurer, Dr. Herman L. Harris. ——At a joint meeting of the medical societies of Butler, Warren, Montgomery and Green counties, held in the Chautauqua grounds, Middletown, July 14, Dr. Thomas A. Dickey, Middletown, was elected president; Dr. Asa C. Messenger, Xenia, secretary, and Dr. Hugh J. Death, Franklin, treasurer.

Hospital Notes.—It is announced that the McKinley home, Canton, is to become a Roman Catholic hospital.——St. Luke's Hospital, Cleveland, was formally opened July 19. The building has 41 private rooms; and in addition a railroad, a male and a female ward, each containing eight beds. The building was erected at a cost of $150.000, and the following compose its staff: Surgery—Drs. Charles B. Parker, Maurice D. Stepp and John F. Hobson; medicine—Dr. Milton J. Lichty; gynecology—Drs. Roland E. Skeel and Albert F. Spurney; nose, ear and throat—Dr. John N. Lenker; eye—Drs. Daniel B. Smith and Edward S. Lauder; obstetrics—Dr. Roland E. Skeel; pediatrics—Dr. Samuel W. Kelley; dermatology—Dr. Harry B. Kurtz, and hydrotherapy—Dr. James Stotter.——The contract for the main building for the State Sanatorium for Tuberculosis, near Mount Vernon, has been awarded to R. H. Evans & Co., Zanesville, on a bid of $300,660.——The contract for the addition to Grant Hospital, Columbus, has been awarded to John Heckert, whose bid was $125,000.

PENNSYLVANIA.

Fire Destroys Hospital.—The City Hospital of Lock Haven was destroyed by fire July 28. There were 30 patients in the institution at the time, but they were all removed without harm. The loss is estimated at $45,000.

Bids for Asylum Rejected.—The state commission for the State Hospital for the Criminal Insane, to be erected at Fairview, Wayne County, has rejected the bids for the erection of the new buildings Nos. 4 and 8. The site of the proposed hospital is a square mile of land near Carbondale, and is 2,200 feet above the sea. The land was deeded to the state for one dollar by the Delaware & Hudson Railway Company.

Personal.—Dr. Harry G. Burns, William H. Weber and Charles C. Williams have been appointed members of the councilmanic committee from the select council of Pittsburg, and Drs. Paul H. Franklin, W. G. Adair, F. H. Frederick and E. F. Schatzman from the common council, to investigate the use of water meters.——Drs. S. S. and William Koser, Williamsport, were seriously injured in an automobile accident near Loyalsockville, July 20.——Dr. Charles C. Wiley, Pittsburg, major-surgeon of the Second Brigade, N. G. Pa., was injured by a stroke of lightning at the National Guard encampment, Gettysburg, July 23.

Philadelphia.

Personal.—Dr. William W. Keen, who has been abroad for more than a year and a half, is expected to return August 25. ——The Alvarenga prize of the *College of Physicians*, Philadelphia, for 1908 has been awarded to Dr. William T. Shoemaker for an essay entitled "Retinitis Pigmentosa."——Dr. John F. X. Jones sailed for Europe August 1.——Dr. Aller G. Ellis has returned from a year's study in Europe.——Dr. Charles J. Hoban sailed for Europe August 8.

Health Report.—The total number of deaths reported for the week ended August 8 aggregated 482, including 268 males and 214 females. This is an increase of 9 over the number reported in the preceding week and an increase of 55 over the number reported in the corresponding week of last year. The principal causes of death were: Typhoid fever, 5; measles, 3; scarlet fever, 3; pertussis, 9; diphtheria, 5; consumption, 56; cancer, 22; apoplexy, 8; heart disease, 34; acute respiratory disease, 13; enteritis, 100; hepatic cirrhosis, 6; appendicitis, 4; Bright's disease, 38; premature birth, 10; congenital debility, 15; senility, 10; suicide, 4; accidents, 14, and marasmus, 13. There were 84 cases of contagious diseases reported, with 13 deaths, as compared with 105 cases and 6 deaths reported in the previous seven days.

FOREIGN.

Galligo Prize.—This prize of $100 is conferred every three years for the best work on syphilis or the diseases of children, written in Italian and offered anonymously in competition. Address communications to the Accademia medico-fisica, via Lamarmora, Florence, Italy.

International Congress of School Hygiene.—Plans are well under way for this congress which will meet at Paris, March 29, 1910. The two preceding congresses were held at Nuremberg, 1904, and at London in 1907. For all information in regard to the congress apply to R. Dinet, rue Cernuschi, Paris V, France. M. Friedel, director of the Musée Pédagogique, 41 rue Gay-Lussac, Paris, has charge of the exposition to be held in connection with the congress.

Typhus Fever in Russia.—It is a matter of history that perhaps no disease in the past has included among its victims so many medical men as typhus fever. This is shown again in the present epidemic in Russia. The last issue of the *St. Petersburg med. Wochenscrift* mentions in its obituary columns four physicians, Drs. Prichodko, Lyssenko, M. Hochberg and Gerassimow, all of whom are said to have succumbed to spotted fever, professionally acquired. One leaves a family, and a pension of about $500 (700 roubles) has been awarded to the widow. The deaths of three other physicians from the same cause were reported in a previous issue. The disease is said to be epidemic in almost every part of the Russian empire, even at Kiev and Moscow.

LONDON LETTER.

(From Our Regular Correspondent.)

London, Aug. 1, 1908.

Lunacy in Ireland.

The large amount of lunacy prevalent in Ireland is a cause of serious concern. Various explanations have been given of the fact. One of the most plausible is that the high percentage is apparent rather than real and is due to the depletion of the country by emigration of its healthiest and most energetic stock. In his annual report, just issued, the medical superintendent of the Cork District Lunatic Asylum brings into great prominence alcoholism as a cause. He reports that there is slight decrease of the number of inmates of the asylum as compared with the previous year, but that the most fruitful cause of insanity is intemperance. Nearly 19 per cent. of the admissions for the year were due to alcoholism. The reduction he regards as a fruit of the temperance movement, which has made considerable progress in Ireland in recent years.

The Teaching of Hygiene.

The board of education has issued a new set of regulations for the training of teachers for elementary schools—regulations in which, for the first time, the necessity for rendering teachers competent instructors in the elements of hygiene and of physical exercises is brought into prominence. The board declares that the matter is urgent and that the absence of proper training of teachers is a grave defect. A model syllabus for the instruction of teachers in the principles of hygiene is supplied and the authorities of training colleges are permitted to offer for the approval of the board such modifications of this model as may seem to them better suited to the special opportunities or requirements of any given institution. The model includes a study of the indications of fatigue and of the methods of recognizing difficulties arising from defects of special sense. It is well known that even in schools for children of the wealthy children have been punished for supposed inattention when the fault was an inability to see or to hear properly. Under the head of cleanliness the syllabus shows the teacher how to render the class room an object lesson in cleanliness.

BERLIN LETTER.

(From Our Regular Correspondent.)

BERLIN, July 1, 1908.

Statistics of Population.

There is no need of argument with physicians to establish the necessity of a growth in population. Not only from the standpoint of capacity for defense, but also from the most various social points of view, an increase in population is to be desired, both by an increase in the number of births and by a diminution in the death rate. Germany has for many years been able to claim a good position in national statistics in both respects. Of late, however, the conditions have altered for the worse to her disadvantage, and political economists and physicians have on this account repeatedly taken opportunity carefully to point out this circumstance and to make efforts toward an improvement.

So far as the death rate is concerned, we have to do chiefly with infant mortality, which in Germany still maintains a high figure. For this reason attention has been directed with increased zeal to the nutrition of infants, which is, as is well known, of the greatest influence with reference to the death rate. Pediatrists and, under their leadership, the state, societies and private persons of means are working to improve the condition of nutrition of infants, especially among the poorer classes of the population. Particularly an effort is being made to induce the women of the working class to keep up breast feeding more than has formerly been the case. For a period the nourishment of infants by the bottle with cow's milk was very popular, in consequence especially of the labors of Soxhlet, to such an extent that pediatrists esteemed it as of equal value with breast feeding. It is now recognized, however, that human milk deserves the preference by far, not only for the production of stronger children and the avoidance of constitutional weakness, especially rickets, but also for the reduction of the death rate. This doctrine is of equal force for the poorer as for the well to do classes. Even among the latter breast feeding has quite markedly diminished in prevalence, so that, for instance in Frankfort on the Main, the employment of wet nurses as a substitute for the nourishment by the mother is scarcely known and bottle feeding is generally employed. While the preference for bottle feeding among the poorer population is occasioned by the failure of strength and of breast milk among the women and by lack of time in consequence of the necessary occupation of the woman in housework or in factories, among the well to do, convenience, indolence and similar factors are especially influential. The disinclination of women to nurse their own children is being gradually diminished by the repeated warnings of physicians in word and writing, and the offering of prizes for women who have nursed their children has had a favorable influence in assisting this effort with the women of the lower classes. A great deal has already been accomplished. From a publication of the Imperial Health Office, which appeared last year, it appears that the death rate of infants in many districts of Germany has been appreciably lowered in late years, in some places as much as 50 per 1,000. Last year the cornerstone of a model institution for the campaign against infant mortality was laid which, it was said, was founded on the initiative of the empress and therefore bears her name. In this institution the questions relating to the appropriate nourishment and the reduction of the mortality of infants are to be studied practically and scientifically.

As to the other factor affecting the growth of the population, namely, the birth rate, Germany, as has been remarked, is not in so good a position as formerly. In places of over 2,000 inhabitants the number of births fell on the average, reckoned for 1,000 inhabitants, from 38.6 in the years from 1867 to 1870 to 33.3 in 1902. In Berlin there were in 1876 240 births for every 1,000 married women, in 1905 only 110. In Stuttgart in the period from 1872 to 1875 there were on the average, 45 births for 1,000 inhabitants, but in 1906 only 29, in Munich 46 births in 1877 per 1,000 fell to only 30 in 1906. It is readily seen that it is in the cities that the evil is especially great, and as the urban population of Germany increases from year to year the fear that the increase of population will be progressively diminished is near at hand. In 1876 the excess of births over deaths was 14.6 per 1,000 inhabitants, but in 1905 it was only 13.2. The reasons for the reduction of the birth rate are evident. Economic questions play a rôle here, even among the well to do, more than in connection with infant mortality. The increased demands entailed in making a living reduce the inclination and the ability of men to marry and on the other hand, favor the artificial limitation of offspring. Families with two children, which were formerly characteristic of the conditions prevailing in France, may be found now with extraordinary frequency in Germany.

But it is just the consideration of the situation in France which increases the anxiety of the German political economists. In France, where the family has not remained stationary with two children, but in not a few instances has descended to the plane of one child, the birth rate has continually diminished. According to the statistics of population for 1907, the births were 33,000 less than the year before. While previous to 1907, the birth rate exceeded the death rate to a slight extent, during this year the relation was reversed, the number of deaths exceeded the births by 20,000, and an actual reduction of the population has occurred in France for the first time. These conditions, of course, must occasion the greatest anxiety in that country. Some years ago the French government appointed a commission with the task of working out a program for raising the birth rate. The commission proposed, among other measures, to reduce the taxes of the fathers of large families, to simplify the formalities of marriage, and to facilitate the naturalization of the numerous foreigners.

While the conditions in England are by no means so bad as in France, they are not at all promising. In England and Wales the number of births in 1907 was only 26.3 per 1,000 inhabitants. In comparison with 1876 the fertility of married women in 1907 had fallen 25 per cent. The same evil is to be seen in many civilized countries, and there is scarcely any doubt that the same causes are influential in all.

Oscar Liebreich.

The eminent pharmacologist of the Berlin University and Privy Medical Councillor (Geheimer Medizinalrat), Professor Oscar Liebreich, died July 2 at the age of 69. He was compelled to give up his active teaching a year ago. An advancing arteriosclerosis, which especially affected the brain and led to dementia, necessitated his withdrawal from the faculty of the university and entrance into a sanatorium. His death was only a release for him. Liebreich belonged to the circle of men who have materially increased the reputation of German science in general and of the Berlin University in particular. He belonged to the group of men of which Helmholtz, Virchow, Langenbeck, v. Bergmann and others were the most prominent members. As assistant of Virchow, whose institute he entered in 1867, it was his fortune to discover the hypnotic action of chloral hydrate which had been produced by Liebig in 1832. This discovery was practically and theoretically of the greatest importance and would of itself be enough to secure for Liebreich a permanent place of honor in the history of medicine. To this were added other discoveries in the same field of analgesic agents, he discovered butylchloral and ethyl chlorid. Of other investigations, the determination that protagon is the principal phosphorus containing constituent of the brain (an observation which Liebreich made when a student), the introduction of hydrargyrum formamidatum, and especially that of lanolin, should be noted. His chemical studies of food stuffs and investigation of balneotherapy should be emphasized. In a literary way Liebreich was extraordinarily fruitful. The compendium of materia medica published by him and Langaard is widely used. He founded the *Therapeutische Monatshefte* and the less well known *Enzyklopadie der Therapie*. Liebreich was a clever man who knew well how to turn his scientific discoveries to good use. He was a brilliant speaker. As a teacher, it is true, he was at a disadvantage for medical students, because he did not understand how to meet the practical needs of students. But the smaller the amount of pharmacology the students of medicine learned in his institute, the more severe were his examinations. On this account he was quite as much feared as an examiner as Virchow, and not a few students failed under him one or more times. Personally he was agreeable and he played a not insignificant rôle in the social life of Berlin. His death is a loss to the medical faculty of Berlin. And in this case also the view which we expressed in a former letter holds good, the rising generation does not justify the hope that men like Liebreich can be replaced by others equally gifted.

Pharmacology

THE BROADER AIMS OF THE COUNCIL ON PHARMACY AND CHEMISTRY.

TORALD SOLLMANN, M.D.
Member of the Council, Professor of Pharmacology and Materia Medica at the Medical Department of Western Reserve University
CLEVELAND, OHIO.

(*Continued from page 511.*)

XXI. THE CONSTRUCTIVE WORK OF THE COUNCIL.

In the preceding paper I emphasized the fact that the real tendency of the Council has been toward construction. This phase of the work may have been obscured in the public mind by the more striking nature of the exposures. In fact, however, these exposures and condemnations are merely incidental; the practical success of the Council must be measured by its constructive work. The number of products which have been brought to compliance with the rules is a better test of success than the number which have been refused or exposed. Of the more than 300 articles admitted by the Council, only a fraction complied with the rules when these were formulated. This showing is a gratifying measure of progress, but is a symptomatic rather than an essential measure.

Whether a thousand, or a hundred, or but ten products are recognized by the Council is not in itself a vital matter. This is important mainly in that it throws light on the really important question, whether it is more profitable to market a medicinal product honestly or dishonestly. For this reason, then, there is cause for congratulation in the fact that so many remedies are being marketed in conformity with the Council's rules—not because of their number, but because it proves that manufacturers consider it profitable, and they consider it profitable because they are convinced that a large part of the medical profession will insist on this compliance. On the other side of the ledger, however, is the fact that five-sixth of the remedies advertised in current journals do not conform to these rules. This seems to show that a very large part of the profession does not insist on these rules.

Signs of progress there are in all directions. The articles submitted and re-submitted to the Council show constant improvement. Correspondence with manufacturers shows a more serious realization of their responsibilities. Prescription-counts all over the country indicate that the tide in the use of proprietary remedies has turned; and it is to be hoped that the decrease affects mainly the unworthy products. The five-sixths of unaccepted advertised articles, however, is a stubborn fact; it may be the indication of a desperate death struggle, or it may mean that the end of the campaign is not yet in sight. It probably indicates both, but whatever its meaning, we should be active to hasten the end.

As I said in my first paper, the Council should advance to a broader work—a program of research, clinical as well as experimental; of popular dissemination of scientific information; in a word, the general advancement of the sane study of scientific therapeutics. These matters have been started; but the main thing at the present time is to complete the present task. This is the "proprietary problem"; it should be disposed of NOW. In the next and final paper, I shall discuss the directions which this further work must take.

(*To be concluded.*)

The Ethics of Medical Journalism in Germany.

The evils that affect the medical press in this country are evidently not limited to America. The "original article" type of proprietary write-up and the department of "therapeutic notes" is evidently by no means an unknown quantity in European medical journalism.

A somewhat lively discussion of journalistic ethics has recently been going on between two German medical journals—the *Aerztliche Mittheilungen*, and the *Munchener medizinische Wochenschrift*. The former journal expresses the opinion editorially that the medical profession should deal thoroughly with the subject of medical advertising. These sentiments, like many to be found in medical journals nearer home, while admirable as expressions of abstract principle, are somewhat vitiated by the inconsistence of existing facts. This the *Munchener medizinische Wochenschrift* points out and calls attention to the department published by the *Aerztliche Mittheilungen* entitled "Aus der Praxis" (from practice) which, while ostensibly devoted to reliable clinical reports, is, in fact, largely made up of "reading notices" of proprietary products. As the *Munchener medizinische Wochenschrift* states, there may be no objection to inserting such notices in the advertising pages, as everyone knows that space is paid for. Such departments as "Aus der Praxis," however, may be assumed to belong to the parts of the journal for which the editor is responsible and in which no matter of a commercial nature appears.

It appears, too, that the *Aerztliche Mittheilungen* had among its original articles a paper by Dr. Golinger on the action of the proprietary preparation, biocitin. Golinger, it seems, is one of those physicians, not unknown in the United States, who prostitute the profession of medical journalism by placing themselves at the disposal of pharmaceutical manufacturers for the purpose of preparing "original articles" that exploit proprietary products.

The German medical press has an association whose members refuse to accept for their respective journals, either such "original articles" or abstracts of them. The existence of such an association and the fact that the ethics of medical journalism is a subject of sufficient moment to give rise to the discussion referred to, augurs well for the future of medical journalism, in Germany at least.

Proprietary Meat Juice.

Puro, a widely advertised German tonic, is stated to be the meat juice expressed from raw beefsteak, each bottle "representing five pounds of meat juice." About a million bottles of the preparation are sold annually in Germany, and quite a sensation has followed the announcement by Prof. von Gruber in the Antiquackery Society's organ, the *Gesundheitslehrer*, that there is little or no meat juice in the preparation and that it consists only of meat extract and egg albumin. The numerous testimonials from physicians to the remarkable efficacy of the "meat juice" preparation show once more the effects of auto-suggestion in the matter of proprietary articles.

Correspondence

Cheapness in Pharmacy.

EVANSTON, ILL., July 25, 1908.

To the Editor:—In Dr. Sollmann's article in THE JOURNAL, June 27, page 2146, there appears the following statement: "If the official products are used with due regard to their therapeutic limitations; if they are actually obtainable of a grade superior, or at least equal, to that of the proprietary equivalents, and if they are materially cheaper to the consumer—then their use should be encouraged."

Because of the great good Dr. Sollmann is doing, the broadness, generally speaking, of his views on medical and pharmaceutical subjects, and the thoroughness of his education along these lines, it is disappointing that he should thus prejudice the pharmacist's side of the question.

The extended circulation of THE JOURNAL and Sollmann's reputation will be the means of attracting the attention of so many physicans to the statement, that the article should not be passed without discussion. I do not desire to criticise, but to call attention to another side of this big subject.

The hint given of cheapness of product, in a way, is a continuance of the same grinding down process, which has been going on for years, and disheartens the man who wishes to practice true pharmacy. Quality and reliability should be the physicians' goal. The law of supply and demand will regulate the just price. It may be unfortunate, but it is nevertheless true, that without proper compensation true pharmacy is an impossibility.

An article in *Appleton's Magazine*, April, 1908, discussed the compensation for physicians' services in its true light, and may well be applied to pharmacy. The pharmacist's charges should not, and can not, be simply for the material furnished plus an allowance for time at laborer's rates. The remuneration *which he should and must receive differs not one iota* from that of any one of the professional followings, plus ordinary mercantile profits. The amount received must be in proper proportion to the great length of time and the necessary education required to enable him to compound and to dispense properly. The competent surgeon is not paid two, five or fifteen hundred dollars for simply carving human flesh, but for so skilfully performing an operation that a human life will be saved. So with the pharmacist, a proper reward must follow for his services in skilfully manufacturing and dispensing while assisting in prolonging or saving that same life. It is realized that we must exercise the greatest amount of patience possible in handling the subject so often spoken of as "a return to the practice of medicine and pharmacy" and also with each other while doing so. In order to accomplish the *greatest amount of good, it is necessary, without doubt, that* the physician should become more fully acquainted with the pharmacist's side of the subject and the pharmacist must take an equal interest in becoming more intelligent regarding the physician's ground.

'The well known fact" that the druggist's charges are far greater than is necessary, has never been proved by the existence of swollen bank accounts or a showing of what money can buy Compare conditions as they exist It does not appear to be a crime for those engaged in purely commercial lines to own a comfortable home and a building in which to carry on their business, to be interested in outside investments, and to have a bank account which enables them to pay bills promptly and take advantage of discounts or favorable changes in the market price on the material they handle: but for the pharmacist no such conditions must ever enter into his dreams. Going confidentially deeper into this side of the question, dare we tell the layman how necessary is the laboratory, which to day for financial reasons does not exist?

The movement inaugurated by the American Medical Association and backed by all good intentioned men will gradually improve, it is hoped, the overcrowded conditions, and the future physician and pharmacist will occupy more nearly their rightful positions If physicians honestly desire good pharmacy, it must be nursed and assisted in every way. No one attempts to deny that proprietary and specialty articles are very much overpriced, but that side of the question will right itself. The main point to be kept in view is the non secrecy of the formula. The physician and the pharmacist, working hand in hand, should not find it difficult to decide on what mixtures are necessary; neither should he be willing to betray the trust of those who so confidently place their lives in their hands, by prescribing or dispensing medicines the nature of which they do not know We need not take into consideration the charges made at a "drug store" where slipshod methods of compounding and dispensing are used. This class of stores will find their own graves at a rate proportionate to the advance made by the total body Those best fitted must be given an opportunity to do enough work in true pharmacy so that it will be possible to reach the standard desired, and at the same time the public must be educated to higher demands. With the many drug stores of to day owned and run by those having but the one thought 'for commercial reasons only" in mind, it is a matter for future demonstration as to whether it will be possible to be a pharmacist or own a pharmacy.

Every earnest, educated laborer is entitled to his hire, and the compensation should be sufficient to allow him to live comfortably and lay aside for old age or the days when he will be unable to work For lack of that necessary intimate acquaintance with the subject it ill becomes a pharmacist to try to regulate a physician's charges, and for the same reason the physician should refrain from attempting to price the pharmacist's goods or services GEORGE P. MILLS, Ph.G.

This letter was referred to Dr. Sollmann, whose reply follows

The plea of Mr. Mills deserves the serious attention of the medical profession Whoever has had the least acquaintance with the business side of pharmacy will agree that the common notion of the enormous profits of the druggist are entirely erroneous Indeed, the income of the average pharmacist is relatively so meager that it deters many of the best men from entering or continuing in pharmacy. No profession can advance or even keep up a high standard unless its returns are fairly attractive

There is no good reason why a competent pharmacist should ask less for products which he makes himself than for those which he buys from a manufacturer. To the contrary, this would, *in the end*, work *against the public interest*, since it would cheapen his professional pride However, if he asks the same price, then the "lower cost" should not be used as an argument for prescribing official products, as is so often done. The financial consideration, in this case, is the affair of the pharmacist, and does not concern the physician and his patient. This is the meaning which I had intended to convey by the words which Mr Mills criticises.

Book Notices

SURGERY By John Allen Wyeth, M D, LL D (University of Alabama), President of the New York Academy of Medicine Cloth Pp 816 with 864 illustrations of which 57 are colored Price, $6 00 New York Marion-Sims Wyeth & Co, 1908

Twenty-one years ago Wyeth's 'Text Book of Surgery" made its appearance and immediately became recognized as a standard work of reference and one to be depended on Having become of age, it has been rechristened and now appears under a new name, 'Wyeth's Surgery." Not only has it been rechristened, however, in many essentials it has been rewritten; at least every subject has been brought up to date While most of the illustrations contained in the old book have been retained, many new ones have been added, a number being in colors Naturally, one does not expect such exhaustive treatment of a subject or such detailed descriptions in a single volume as in a composite work of several volumes. But in this instance there is no criticism in this regard On the whole, the new "Wyeth's Surgery" will continue to hold the high place that its predecessor— Wyeth's "Text Book of Surgery"– has held for the last twenty one years.

CONTRIBUTIONS TO THE SCIENCE OF MEDICINE AND SURGERY By the Faculty in Celebration of the Twenty fifth Anniversary of the Founding of the New York Postgraduate Medical School and Hospital Paper Pp 485

This is a handsome volume, issued to commemorate the twenty-fifth anniversary of the founding of the New York *Postgraduate Medical School and Hospital. It contains*, in addition to forty eight original articles by members of the faculty, not a few of which are of more than ordinary interest, an obituary notice with an excellent etched portrait, by Jacques Reich, of the late Dr D B St. John Roosa, to whom it will serve as a worthy memorial tribute from his former colleagues

Tact.—There is no better market for tact than the home of and the presence of the sick. Human nature when sick and the human nature of friends of the sick is often a strange, unknown quantity, and the physician must meet emergencies arising from this source and he must often meet them instantly, with great resourcefulness It is tactful to acquire and hold the confidence of the patient's friends in and about the home, for many a patient is completely under the influence of his friends —*Leucocyte*.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

RELATIVE PROPORTIONS OF MALE AND FEMALE BIRTHS.

Terre Haute, Ind., July 23, 1908.

To the Editor:—Can you give me the relative proportion of male and female birth in this and foreign countries?

F. D. Wiedemann.

Answer.—In a brochure on "Numerical Proportions of the Sexes at Birth" (Memoirs of the American Anthropological Association, i, part 4), Dr. J. P. Nichols, basing his deductions on the available statistics of living births in all parts of the world aggregating 693,785,722, says that ordinarily there is a slight, though constant and decided, excess of male over female living births. We quote as follows from this brochure, pages 256, 257 and 265:

Proportions of the Sexes of Infants Born Living.—The statistics for the United States are scanty and scattered: but in 8,377,527 white births there were an average of 1,059 sons born alive for every 1,000 daughters; and this may be taken as an approximate average ratio for this country. The ratio for Massachusetts for fifty-one years, 1,056, is practically the same as the general average; while the adjacent states of Rhode Island and Connecticut gave ratios of 1,043 and 1,066. The highest ratio is for Philadelphia (seven years), 1,093; while New York City (twelve years) has only 1,046.

For European countries the statistics are much more complete and satisfactory. An aggregate of 649,415,411 living births in all parts of Europe yields an average ratio of 1,057 sons for every 1,000 daughters; for the decade 1891-1900, 125,394,583 living births give a ratio of 1,053. For most countries in Europe the ratios range in the neighborhood of the average. In the southernmost countries of Europe there is a decided general tendency toward a much higher ratio of boys, such as 1,132 for Greece (the highest in Europe), 1,088 for Roumania, 1,082 for Bulgaria, and 1,078 for Spain (1,103 for 1900-1903); Servia, however, is at the average, 1,058, while Italy (1,061) and Portugal (1,067) are not greatly above. In the northern countries of Europe, on the contrary, the ratio of boys tends rather below the average, although the difference is not nearly so marked as in the case of the southern countries. The ratio for England and Wales is the lowest in Europe, 1,041 for 1838-1903, 1,036 for 1891-1900. The recent ratio for France (1891-1900) is also low, 1,043.

The Musselman or Arabian population of Algeria gives the ratio of 1,191 sons for 1,000 daughters, the highest ratio found anywhere; this high rate may be taken into consideration in connection with the high rates of the neighboring southernmost countries of Europe. India, also a tropical country, yields a high rate, 1,075. The ratio in Japan, 1,047, is below the general average for the white race. The lowest ratio of all is given by the colored race in the United States, 778,443 births yielding the ratio of only 1,009.

It thus appears that there is a slight but constant numerical excess of male over female living human births in all parts of the world, the average proportions for the white peoples ranging from about 1,053 to 1,059 sons for every 1,000 daughters. There are slight variations in the ratios in different countries. In countries adjacent to the Mediterranean the ratios of sons are much above the average, while in the north of Europe they are rather lower. The colored race in the United States shows a very low rate, while the Japanese are below the average for the whites.

Proportions of the Sexes of Infants Still-Born.—The available statistics of still-births for the world, as reported, with the statistics of the corresponding living births, aggregating 13,635,986 still-births and 433,383,593 associated living births. In the main, the still-births are of fetuses of more than six months' gestation.

From this it immediately appears that the number of males still-born is always much greater than that of females still-born; and there are greater fluctuations in the ratios than in the case of living births.

INTERNATIONAL MEDICAL CONGRESS.

New Haven, Conn., Aug. 7, 1908.

To the Editor:—Kindly inform me when and where will occur the 1909 meeting of The International Medical Congress.

A. G. Nadler.

Answer.—Aug. 24 to Sept. 4. 1909, at Budapest

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, for the week ended Aug. 8, 1908:

Mabee, J. L., capt., M. C., relieved from duty on the transport *Sherman* and ordered to Jefferson Barracks, Mo., for duty: granted leave of absence for two months.

Bratton, T. S., maj., M. C., ordered from Fort Des Moines, Iowa, with Second Cavalry to camp near Fort Riley, Kans.

Bourke, J., capt., M. C., ordered from Fort Leavenworth, Kans., to duty at camp near Fort Riley, Kans.

Stone, J. H., maj., M. C., ordered from Newport News, Va., to the U. S. Military Prison, Fort Leavenworth, Kans., for duty.

Howell, P., capt., M. C., when relieved from duty at the U. S. Military Prison, Fort Leavenworth, Kans., ordered to the Army General Hospital, Fort Bayard, N. Mex., for duty.

Palmer, F. W., capt. M. C., when relieved from duty at the Army General Hospital, Fort Bayard, N. Mex., ordered to Fort Benjamin Harrison, Ind., for duty.

Duncan, W. A., capt., M. C., granted leave of absence for 15 days.

Carter, W. F., maj., M. C., granted leave of absence for 1 month.

Stedman, C. J., capt., M. C., granted leave of absence for 3 months.

Wickline, W. A., capt., M. C., left Leon Springs, Texas, and arrived at Camp Emmett Crawford, Wyo., with detachment of Company B, Hospital Corps.

Freeland, H. L., first lieut., M. R. C., ordered to duty at Camp Emmett Crawford, Wyo.; granted leave of absence 20 days, about October 1.

Bayly, R. C., first lieut., M. R. C., ordered from Fort D. A. Russell, Wyo., to Camp Emmett Crawford, Wyo., for duty at field hospital during maneuvers.

Harris, H. L., first lieut., M. R. C., granted leave of absence for 16 days, after close of maneuvers near Fort D. A. Russell, Wyo.

Mueller, A., first lieut., M. R. C., ordered from Milwaukee, Wis., to Jefferson Barracks, Mo., for duty.

The following named first lieuts., M. R. C., recently appointed from contract surgeons, U. S. Army, with rank from July 7, 1908, are ordered to active duty and assigned at their present stations: Archer, W. M., Jr., Artaud, F. E., Bayley, E. W., Daywalt, G. W., Dickenson, C. F., Hewitt, J. M., Hogan, D. D., Hughes, L. S., Kelly, J. P., McMillan, C. W., Phelan, H. du R., Truax, J. P., Tuttle, G. B., Van Kirk, H. H., Coffey, A. McD., Coffin, H. L., Kierulff, H. N., Kiess, C. C., Porter, E. H., Wilson, E., Bastion, J. E., Lincoln, H. F., Lowe, T. S., Parkman, W. E.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and other officers of the Public Health and Marine-Hospital Service for the seven days ended Aug. 5, 1908:

Pettus, W. J., asst.-surgeon-general, granted leave of absence for 1 month and 15 days, from Aug. 22, 1908, with permission go beyond the seas.

Carrington, P. M., surgeon, detailed to represent the service at the International Congress on Tuberculosis, to be held in Washington, D. C., Sept. 21 to Oct. 3, 1908.

Carrington, P. M., surgeon, granted an extension of leave of absence on account of sickness for 7 days.

Wertenbaker, C. P., surgeon, granted leave of absence for 1 month, from Aug. 9, 1908.

Clark, T., P. A. surgeon, granted leave of absence for 1 day, July 18, 1908, under Paragraph 191, Service Regulations.

Creel, R. H., P. A. surgeon, leave of absence granted for 2 months, from Aug. 3, 1908, amended to be effective from Aug. 31, 1908.

Mullan, E. H., asst. surgeon, granted leave of absence for 7 days, from July 8, 1908, under Paragraph 191, Service Regulations.

Herring, R. A., asst.-surgeon, granted leave of absence for 1 day, July 31, 1908, under Paragraph 191, Service Regulations.

Stiles, Ch. W., chief of Division of Zoology, Hygienic Laboratory, detailed to attend the annual meeting of the American Public Health Association, Winnipeg, Canada, Aug. 25-26, 1908.

Bean, L. C., acting asst.-surgeon, granted leave of absence for 3 days, from Aug. 5, 1908.

Cleaves, F. H., acting asst.-surgeon, granted leave of absence for 12 days, from Aug. 3, 1908.

Delgado, J. M., acting asst.-surgeon, granted leave of absence for 1 day, July 30, 1908, under Paragraph 210, Service Regulations.

Hamilton, H. J., acting asst.-surgeon, granted leave of absence for 2 days.

Hicks, W. R., acting asst.-surgeon, leave of absence granted for 14 days, from June 1, 1908; amended so as to grant 5 days only.

Houghton, M. W., acting asst.-surgeon, granted leave of absence for 15 days, from Aug. 8, 1908.

Rowles, J. A., acting asst.-surgeon, granted leave of absence for 5 days, from July 29, 1908.

Safford, M. V., acting asst.-surgeon, granted leave of absence for 5 days, from July 28, 1908, under Paragraph 210, Service Regulations.

Savage, Walter L., acting asst-surgeon, granted leave of absence for 30 days, from Aug. 8, 1908.

Schwartz, Louis, acting asst.-surgeon, granted leave of absence for 7 days, from Aug. 3, 1908, under Paragraph 210, Service Regulations.

Weldon, W. A., acting asst.-surgeon, granted leave of absence for 30 days, from July 30, 1908.

Wilson, J. G., acting asst.-surgeon, granted leave of absence for 1 day, July 27, 1908, under Paragraph 210, Service Regulations.

Megaw, H., pharmacist, granted leave of absence for 30 days, from Sept. 1, 1908.

Ryder, L. W., pharmacist, granted leave of absence for 1 day, July 31, 1908 under Paragraph 210 Service Regulations

Thomas A M pharmacist directed to report to Surgeon H W Austin chairman of a board of examiners to determine his fitness for promotion to the grade of pharmacist of the second class

RESIGNATION

Pharmacist R Miskimon resigned to take effect Aug 1, 1908

BOARDS CONVENED

A board of medical officers was convened to meet at New York Aug 5 1908 for the purpose of making a physical examination of officers of the Revenue Cutter Service Detail for the board P A Surgeon J A Nydegger, chairman, Acting Asst Surgeon Edward F Lindeman, recorder

A board of medical officers was convened to meet at San Francisco on the call of the chairman, for the purpose of examining Pharmacist Thomas to determine his fitness for promotion to the grade of pharmacist of the second class Detail for the board Surgeon H W Austin chairman P A Surgeon W W King recorder

Health Reports.

The following cases of smallpox yellow fever, cholera and plague have been reported to the Surgeon General Public Health and Marine Hospital Service, during the week ended August 7 1908

SMALLPOX—UNITED STATES

California San Francisco, June 11 18 8 cases
Illinois Springfield July 17 23 1 case
Indiana Indianapolis, July 19 26, 1 case, South Bend July 18 25 2 cases
Kansas Kansas City, July 18 25, 1 case, Topeka, July 19 26, 1 case
Louisiana New Orleans July 18 25 1 case (imported)
Minnesota Winona, July 11 18 1 case
Ohio Dayton July 11 18, 4 cases
Tennessee Knoxville, July 18 25 1 case
Virginia Waynesboro, June and July, 20 cases
Washington Spokane, July 11 18, 5 cases, Tacoma, July 12 19, 2 cases
Wisconsin La Crosse, July 18 25, 5 cases, Milwaukee, July 11 18, 3 cases, 1 death

SMALLPOX—INSULAR

Philippine Islands Manila June 6 20, 5 cases, 4 deaths

SMALLPOX—FOREIGN

China Foochoo June 21 27, present, Hongkong May 31 June 6, 4 cases, 3 deaths
Ecuador Guayaquil June 13 27, 7 deaths
Formosa June 6 13 1 case
Japan Kobe June 27 July 4, 1 case, Osaka June 20 27, 3 cases, 1 death

YELLOW FEVER

Cuba Daiquiri, Aug 3 2 cases, Aug 4 1 case, Aug 5, 1 case 1 death
Ecuador Guayaquil June 13 29, 1 death
Martinique Fort de France June 21 27 1 case 1 death
Mexico *Tierra Blanca*, July 27, 1 case, *Vera Cruz, Aug* 4 1 case

CHOLERA—INSULAR

Philippine Islands Manila June 6 13 1 case 1 death
Provinces Capiz, 100 cases daily, Pangasinan, 100 cases daily

CHOLERA—FOREIGN

China Hankow, July 25, present

PLAGUE

China Hongkong May 31 June 6, 138 cases 112 deaths
Ecuador Guayaquil, June 13 27 4 deaths
Egypt General, June 25 July 2, 55 cases 25 deaths Alexandria June 26 29, 7 cases 3 deaths
Formosa June 6 July 4 117 cases 121 deaths
India General, June 6 20 1,618 cases, 1 615 deaths
Japan Kobe, June 27 July 4, 1 case, Osaka June 20 27 1 case 1 death
Venezuela Caracas July 4 21, 25 cases (estimated).

Marriages

Ralph C Pease, M D, to Miss Pearl Walker, both of Chardon, Ohio, July 26

Henry Hugh Clark, M D, to Mis Ida P Graham, both of Pittsburg, Pa, July 28

Albert W Adams M D, to Mis Sophia Sarlin, both of Bellevue, Mich, recently

Marvin Scott, M D, Headland, Ala, to Miss Clyde Stoveall of Columbia, Ala, July 29

Clinton J Hancock M D, Greenup, Ill, to Miss Minnie Wood of Casey, Ill, July 22

George Edwin Cook M D, St Louis, Mo, to Miss Lutie Boyce of Jefferson City, Mo, June 7

Gilbert Tyson Smith M D, Stamford, Conn to Miss Olive Schaeffer, at Stamford, Conn, July 15

Frank Y Neer, M D to Miss Hulda Forshay, both of Paterson, N J, at Newark N J, July 14

Alfred S Black, M D, Winifrede, W Va, to Miss Rose Murrill of Charleston, W Va, July 22

Austin Colman Brant, M D, Canton, Ohio, to Miss Mary Bowdle Garde of Clifton, Cincinnati, June 15

George W Bailey, M D, St Martins, N B, to Miss G Dyer of Montreal, Que, at St John, N B, August 1

John D Freeman, M D, Topeka, Kan, to Miss Bernice Hough of Ottawa, Kan, at Kansas City, July 28

H N Oliphant, *M D*, Forest, *Ind*, to Miss Florence Katherine Travis of Monroe, at Frankfort, Ind, July 6

Deaths

Albert G Sprague, M D. Jefferson Medical College, Philadelphia, 1859, a member of the Rhode Island Medical Society, for many years president of the Rhode Island State Board of Health, assistant surgeon of the Tenth, and afterward of the Seventh Rhode Island Volunteer Infantry during the Civil War, for several terms a member of the General Assembly from Warwick, twice president of the Warwick town council, and health officer of Warwick for more than 20 years, died at his home August 11, from angina pectoris, from which he had suffered many years, aged 71

Franklin Theodore Howe, M D Georgetown University School of Medicine, Washington, D C, 1867, a veteran of the Civil War, for many years a clerk in the war department and internal revenue department, later chief clerk of the board of public works of the District of Columbia, for more than 30 years editor and manager of newspapers in Washington died at his home in Brookland, D C, July 28, from heart disease, aged 66

Franklin J Evans, M D University of Pennsylvania Department of Medicine, Philadelphia, 1884, a member of the American Medical Association, president of the Delaware County (Pa) Medical Association, a member of the staff of the Chester (Pa) hospital, local surgeon to the Baltimore & Ohio Railroad, died at his home in Chester July 29, from kidney disease, after an illness of one week, aged 45

Louis C Jacobson, M D Rush Medical College, Chicago, 1903, formerly of Elroy, Wis, a veteran of the Spanish-American War, a member of the Michigan State Medical Society, acting assistant surgeon U S Navy, on duty at the Norfolk (Va) Naval Hospital, died in the King's Daughters Hospital, Portsmouth, Va, July 20, from typhoid fever after an illness of three weeks, aged 29

Elias J Marsh, M D. College of Physicians and Surgeons in the City of New York 1858 a member of the American Medical Association, surgeon during the Civil War, for many years chief medical director of the Mutual Life Insurance Company, a member of the first board of free library trustees of Paterson N J, died from heart disease August 3 at his home in Paterson, aged 73

Charles Armstrong Redick, M D. Western Pennsylvania Medical College, Pittsburg, 1888, of Bellevue, Allegheny, Pa, formerly a member of the staff of St John's Hospital Pittsburg, later of the staff of the Massachusetts State Tuberculosis Sanatorium, Rutland, and for the last year a resident of Baltimore, died in Silver City, N M, from tuberculosis, after an illness of a year, July 27

Lawrence E Whitney, M D Homeopathic Medical College of St Louis, 1879 of Carthage Mo, city physician of Carthage, Mo, was found unconscious July 30 near Carthage, where he had been making a professional call and died in a hospital in that city a few hours later aged 55 Foul play is feared The autopsy showed that death was caused by concussion of the brain

Filson Cooper, M D Eclectic College of Medicine Cincinnati, 1869, a member of the twenty fifth General Assembly of Iowa from Montgomery County and a pioneer practitioner of southwestern Iowa died at his home in Villisca, July 27, from pneumonia, after a short illness, aged 71

Irl Dycus (License Texas 1907), a member of the American Medical Association of Archer City, Texas, was killed and his mutilated body was found July 28 on the tracks of the Fort Worth & Denver Railroad near Wichita Falls, Texas aged 22 Foul play is suspected

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

RELATIVE PROPORTIONS OF MALE AND FEMALE BIRTHS.

Terre Haute, Ind., July 23, 1908.

To the Editor:—Can you give me the relative proportion of male and female birth in this and foreign countries?

F. D. Wiedemann.

Answer.—In a brochure on "Numerical Proportions of the Sexes at Birth" (Memoirs of the American Anthropological Association, i, part 4), Dr. J. P. Nichols, basing his deductions on the available statistics of living births in all parts of the world aggregating 693,785,722, says that ordinarily there is a slight, though constant and decided, excess of male over female living births. We quote as follows from this brochure, pages 256, 257 and 265:

Proportions of the Sexes of Infants Born Living.—The statistics for the United States are scanty and scattered: but in 8,377,527 white births there were an average of 1,059 sons born alive for every 1,000 daughters; and this may be taken as an approximate average ratio for this country. The ratio for Massachusetts for fifty-one years, 1,056, is practically the same as the general average; while the adjacent states of Rhode Island and Connecticut gave ratios of 1,043 and 1,066. The highest ratio is for Philadelphia (seven years), 1,093; while New York City (twelve years) has only 1,046.

For European countries the statistics are much more complete and satisfactory. An aggregate of 649,415,411 living births in all parts of Europe yields an average ratio of 1,057 sons for every 1,000 daughters; for the decade 1891-1900, 125,394,583 living births give a ratio of 1,053. For most countries in Europe the ratios range in the neighborhood of the average. In the southernmost countries of Europe there is a decided general tendency toward a much higher ratio of boys, such as 1,132 for Greece (the highest in Europe), 1,088 for Roumania, 1,082 for Bulgaria, and 1,078 for Spain (1,103 for 1900-1903); Servia, however, is at the average, 1,058, while Italy (1,061) and Portugal (1,067) are not greatly above. In the northern countries of Europe, on the contrary, the ratio of boys tends rather below the average, although the difference is not nearly so marked as in the case of the southern countries. The ratio for England and Wales is the lowest in Europe, 1,041 for 1838-1903, 1,036 for 1891-1900. The recent ratio for France (1891-1900) is also low, 1,043.

The Musselman or Arabian population of Algeria gives the ratio of 1,191 sons for 1,000 daughters, the highest ratio found anywhere; this high rate may be taken into consideration in connection with the high rates of the neighboring southernmost countries of Europe. India, also a tropical country, yields a high rate, 1,075. The ratio in Japan, 1,047, is below the general average for the white race. The lowest ratio of all is given by the colored race in the United States, 778,443 births yielding the ratio of only 1,009.

It thus appears that there is a slight but constant numerical excess of male over female living human births in all parts of the world, the average proportions for the white peoples ranging from about 1,053 to 1,059 sons for every 1,000 daughters. There are slight variations in the ratios in different countries. In countries adjacent to the Mediterranean the ratios of sons are much above the average, while in the north of Europe they are rather lower. The colored race in the United States shows a very low rate, while the Japanese are below the average for the whites.

Proportions of the Sexes of Infants Still-Born.—The available statistics of still-births for the world, as reported, with the statistics of the corresponding living births, aggregating 13,635,986 still-births and 433,383,593 associated living births. In the main, the still-births are of fetuses of more than six months' gestation.

From this it immediately appears that the number of males still-born is always much greater than that of females still-born; and there are greater fluctuations in the ratios than in the case of living births.

INTERNATIONAL MEDICAL CONGRESS.

New Haven, Conn., Aug. 7, 1908.

To the Editor:—Kindly inform me when and where will occur the 1909 meeting of The International Medical Congress.

A. G. Nadler.

Answer.—Aug. 24 to Sept. 4, 1909, at Budapest

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, for the week ended Aug. 8, 1908:

Mabee, J. L., capt., M. C., relieved from duty on the transport *Sherman* and ordered to Jefferson Barracks, Mo., for duty: granted leave of absence for two months.

Bratton, T. S., maj., M. C., ordered from Fort Des Moines, Iowa, with Second Cavalry to camp near Fort Riley, Kans.

Bourke, J., capt., M. C., ordered from Fort Leavenworth, Kans., to duty at camp near Fort Riley, Kans.

Stone, J. H., maj., M. C., ordered from Newport News, Va., to the U. S. Military Prison, Fort Leavenworth, Kans., for duty.

Howell, P., capt., M. C., when relieved from duty at the U. S. Military Prison, Fort Leavenworth, Kans., ordered to the Army General Hospital, Fort Bayard, N. Mex., for duty.

Palmer, F. W., capt. M. C., when relieved from duty at the Army General Hospital, Fort Bayard, N. Mex., ordered to Fort Benjamin Harrison, Ind., for duty.

Duncan, W. A., capt., M. C., granted leave of absence for 15 days.

Carter, W. F., maj., M. C., granted leave of absence for 1 month.

Stedman, C. J., capt., M. C., granted leave of absence for 3 months.

Wickline, W. A., capt., M. C., left Leon Springs, Texas, and arrived at Camp Emmett Crawford, Wyo., with detachment of Company B, Hospital Corps.

Freeland, H. L., first lieut., M. R. C., ordered to duty at Camp Emmett Crawford, Wyo.; granted leave of absence 20 days, about October 1.

Bayly, R. C., first lieut., M. R. C., ordered from Fort D. A. Russell, Wyo., to Camp Emmett Crawford, Wyo., for duty at field hospital during maneuvers

Harris, H. L., first lieut., M. R. C., granted leave of absence for 16 days, after close of maneuvers near Fort D. A. Russell, Wyo.

Mueller, A., first lieut., M. R. C., ordered from Milwaukee, Wis., to Jefferson Barracks, Mo., for duty.

The following named first lieuts., M. R. C., recently appointed from contract surgeons, U. S. Army, with rank from July 7, 1908, are ordered to active duty and assigned at their present stations: Archer, W. M., Jr., Artaud, F. E., Bayley, E. W., Daywalt, G. W., Dickenson, C. F., Hewitt, J. M., Hogan, D. D., Hughes, L. S., Kelly, J. P., McMillan, C. W., Phelan, H. du R., Truax, J. P., Tuttle, G. B., Van Kirk, H. H., Coffey, A. McD., Coffin, H. L., Kierulff, H. N., Kress, C. C., Porter, E. H., Wilson, E., Bastion, J. E., Lincoln, H. F., Lowe, T. S., Parkman, W. E.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and other officers of the Public Health and Marine-Hospital Service for the seven days ended Aug. 5, 1908:

Pettus, W. J., asst.-surgeon-general, granted leave of absence for 1 month and 15 days, from Aug. 22, 1908, with permission go beyond the seas.

Carrington, P. M., surgeon, detailed to represent the service at the International Congress on Tuberculosis, to be held in Washington, D. C., Sept. 21 to Oct. 3, 1908.

Carrington, P. M., surgeon, granted an extension of leave of absence on account of sickness for 7 days.

Wertenbaker, C. P., surgeon, granted leave of absence for 1 month, from Aug. 9, 1908.

Clark, T., P. A. surgeon, granted leave of absence for 1 day, July 18, 1908, under Paragraph 191, Service Regulations.

Creel, R. H., P. A. surgeon, leave of absence granted for 2 months, from Aug. 3, 1908, amended to be effective from Aug. 31, 1908.

Mullan, E. H., asst. surgeon, granted leave of absence for 7 days, from July 8, 1908, under Paragraph 191, Service Regulations.

Herring, R. A., asst.-surgeon, granted leave of absence for 1 day, July 31, 1908, under Paragraph 191, Service Regulations.

Stiles, Ch. W., chief of Division of Zoology, Hygienic Laboratory, detailed to attend the annual meeting of the American Public Health Association, Winnipeg, Canada, Aug. 25-26, 1908.

Bean, L. C., acting asst.-surgeon, granted leave of absence for 3 days, from Aug. 5, 1908.

Cleaves, F. H., acting asst.-surgeon, granted leave of absence for 12 days, from Aug. 3, 1908.

Delgado, J. M., acting asst.-surgeon, granted leave of absence for 1 day, July 30, 1908, under Paragraph 210, Service Regulations.

Hamilton, H. J., acting asst.-surgeon, granted leave of absence for 2 days.

Hicks, W. R., acting asst.-surgeon, leave of absence granted for 14 days, from June 1, 1908; amended so as to grant 5 days only.

Houghton, M. W., acting asst.-surgeon, granted leave of absence for 15 days, from Aug. 8, 1908.

Rowles, J. A., acting asst.-surgeon, granted leave of absence for 5 days, from July 29, 1908.

Safford, M. V., acting asst.-surgeon, granted leave of absence for 5 days, from July 28, 1908, under Paragraph 210, Service Regulations.

Savage, Walter L., acting asst-surgeon, granted leave of absence for 30 days, from Aug. 8, 1908.

Schwartz, Louis, acting asst.-surgeon, granted leave of absence for 7 days, from Aug. 3, 1908, under Paragraph 210, Service Regulations.

Weldon, W. A., acting asst.-surgeon, granted leave of absence for 30 days, from July 30, 1908.

Wilson, J. G., acting asst.-surgeon, granted leave of absence for 1 day, July 27, 1908, under Paragraph 210, Service Regulations.

Megaw, H., pharmacist, granted leave of absence for 30 days, from Sept. 1, 1908.

Ryder, L. W., pharmacist, granted leave of absence for 1 day, July 31, 1908 under Paragraph 210 Service Regulations

Thomas A M pharmacist directed to report to Surgeon H W Austin chairman of a board of examiners to determine his fitness for promotion to the grade of pharmacist of the second class

RESIGNATION

Pharmacist R Miskimon resigned to take effect Aug 1 1908

BOARDS CONVENED

A board of medical officers was convened to meet at New York Aug 5 1908, for the purpose of making a physical examination of officers of the Revenue Cutter Service Detail for the board P A Surgeon J A Nydegger, chairman, Acting Asst Surgeon Edward F Lindeman, recorder

A board of medical officers was convened to meet at San Francisco on the call of the chairman for the purpose of examining Pharmacist Thomas to determine his fitness for promotion to the grade of pharmacist of the second class Detail for the board Surgeon H W Austin chairman P A Surgeon W W King recorder

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Health Reports

The following cases of smallpox yellow fever, cholera and plague have been reported to the Surgeon General Public Health and Marine Hospital Service, during the week ended August 7 1908

SMALLPOX—UNITED STATES

California San Francisco June 11 18 8 cases

Illinois Springfield July 17 23 1 case

Indiana Indianapolis, July 19 26, 1 case, South Bend July 18 25 2 cases

Kansas Kansas City, July 18 25, 1 case, Topeka July 19 26, 1 case

Louisiana New Orleans July 18 25 1 case (imported)

Minnesota Winona July 11 18 1 case

Ohio Dayton, July 11 18, 4 cases

Tennessee Knoxville, July 18 25 1 case

Virginia Waynesboro, June and July, 20 cases

Washington Spokane July 11 18, 5 cases, Tacoma July 12 19 2 cases

Wisconsin La Crosse, July 18 25, 5 cases, Milwaukee July 11 18 3 cases, 1 death

SMALLPOX—INSULAR

Philippine Islands Manila June 6 20, 5 cases 4 deaths

SMALLPOX—FOREIGN

China Foochoo June 21 27, present, Hongkong, May 31 June 6, 4 cases, 3 deaths

Ecuador Guayaquil June 13 27, 7 deaths

Formosa June 6 13 1 case

Japan Kobe June 27 July 4, 1 case Osaka, June 20 27, 3 cases 1 death

YELLOW FEVER

Cuba Daiquiri, Aug 3, 2 cases, Aug 4 1 case, Aug 5, 1 case 1 death

Ecuador Guayaquil June 13 29, 1 death

Martinique Fort de France June 21 27 1 case 1 death

Mexico Tierra Blanca, July 27, 1 case, Vera Cruz, Aug 4 1 case

CHOLERA—INSULAR

Philippine Islands Manila June 6 13 1 case, 1 death Provinces Capiz, 100 cases daily, Pangasinan, 100 cases daily

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China Hankow, July 25, present

PLAGUE

China Hongkong May 31 June 6, 138 cases 112 deaths

Ecuador Guayaquil, June 13 27 4 deaths

Egypt General June 25 July 2, 55 cases 25 deaths Alexandria, June 26 29 7 cases 3 deaths

Formosa June 6 July 4 117 cases 121 deaths

India General, June 6 20, 1 618 cases, 1 615 deaths

Japan Kobe, June 27 July 4, 1 case, Osaka June 20 27 1 case 1 death

Venezuela Caracas, July 4 21, 25 cases (estimated).

Marriages

RALPH C PEASE, M D, to Miss Pearl Walker, both of Chardon, Ohio, July 26

HENRY HUGH CLARK, M D, to Miss Ida P Graham, both of Pittsburg, Pa, July 28

ALBERT W ADAMS M D, to Miss Sophia Sarlin, both of Bellevue, Mich recently

MARVIN SCOTT, M D, Headland, Ala, to Miss Clyde Stoveall of Columbia, Ala, July 29

CLINTON J HANCOCK M D, Greenup, Ill to Miss Minnie Wood of Casey, Ill July 22

GEORGE EDWIN COOK M D, St Louis, Mo, to Miss Lutie Boyce of Jefferson City, Mo, June 7

GILBERT TYSON SMITH M D, Stamford, Conn to Miss Olive Schaeffer, at Stamford, Conn, July 15

FRANK Y NEER M D to Miss Hulda Forshay, both of Paterson N J, at Newark N J, July 14

ALFRED S BLACK M D Winifrede, W Va, to Miss Rose Murrill of Charleston, W Va, July 22

AUSTIN COLMAN BRANT, M D, Canton, Ohio, to Miss Mary Bowdle Garde of Clifton, Cincinnati, June 15

GEORGE W BAILEY, M D, St Martins, N B, to Miss G Dyer of Montreal, Que, at St John, N B, August 1

JOHN D FREEMAN, M D, Topeka, Kan, to Miss Bernice Hough of Ottawa, Kan at Kansas City, July 28

H N OLIPHANT, M D, Forest, Ind, to Miss Florence Katherine Travis of Monroe at Frankfort, Ind, July 6

Deaths

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Charles Armstrong Redick, M.D Western Pennsylvania Medical College, Pittsburg, 1888, of Bellevue, Allegheny, Pa formerly a member of the staff of St John's Hospital, Pittsburg, later of the staff of the Massachusetts State Tuberculosis Sanatorium, Rutland, and for the last year a resident of Baltimore, died in Silver City, N M, from tuberculosis, after an illness of a year, July 27

Lawrence E Whitney, M D Homeopathic Medical College of St Louis, 1879, of Carthage, Mo, city physician of Carthage, Mo, was found unconscious July 30 near Carthage where he had been making a professional call and died in a hospital in that city a few hours later, aged 55 Foul play is feared The autopsy showed that death was caused by concussion of the brain

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Irl Dycus (License Texas 1907), a member of the American Medical Association of Archer City, Texas, was killed and his mutilated body was found July 28 on the tracks of the Fort Worth & Denver Railroad near Wichita Falls, Texas, aged 22 Foul play is suspected

John A. Aulguire, M.D. Kansas City (Mo.) Hospital College of Medicine, 1888; a member of the American Medical Association; who was injured at the time of the destruction of his hospital at Pocatello, July 26, died as the result of his injuries two days later, aged 47.

Ezra H. Tobias, M.D. Ohio Medical University, Columbus, 1898; a member of the American Medical Association; physician to the board of health of Bowling Green, Ohio; died suddenly in the office of a physician in that city, August 2, from heart disease, aged 39.

Carl E. Waldeck, M.D. Cleveland Homeopathic Medical College, 1895; formerly of Cleveland; died at his father's home in that city from paralysis, the result of a fall from a hospital which he was building in Goldfield, Nev., three months before, aged 45.

John W. O'Falvey, M.D., L.R.C.S. Ireland, 1853; a veteran of the Crimean War; formerly a member of the Canadian parliament; of Marquette, Mich.; died in St. Mary's Hospital in that city, August 1, from pneumonia, after a short illness, aged 84.

Eliza Jane Wall, M.D. New York Medical College and Hospital for Women, New York City, 1884; formerly of Denver, Colo.; died in Goshen, N. Y., August 1, from bronchitis.

Deaths Abroad.

Henry Ashby, M.D. London, 1878; M.R.C.S. London, 1873; lecturer and examiner on diseases of children at Owens College and Victoria University, Manchester; senior physician at the Manchester Hospital for Children; a member and officer of many learned societies; a strong advocate of the establishment of municipal crèches for motherless children or children with working mothers, of a proper milk supply for children, and of the proper ventilation of the homes of the working classes; one of the most eminent specialists in the diseases of children in Great Britain; died at his home in Didsbury, July 6, aged 62.

Sir John Thomas Banks, K.C.B., M.D. University of Dublin, 1843; F.R.C.P. Ireland, 1844; and president of the institution from 1869 to 1871; regius professor of medicine in the University of Dublin in 1880; physician in ordinary to the queen; and in 1889 made knight commander of the Order of the Bath in recognition of his distinguished services; first president of the Royal Academy of Medicine in 1882; and in 1887 president of the British Medical Association; for more than half a century a distinguished practitioner of Dublin; died July 16, from bronchitis, after a short illness, aged 96.

E. R. Hagen, M.D., formerly professor of laryngology and otology at the University of Leipsic, and a noted writer and translator of works on his specialty, died at Leipsic, July 20, aged 85. He has lived in retirement during the last 15 years on account of a serious eye trouble.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC

Public Instruction in Maryland.

At the 1907 session of the Medical and Chirurgical Faculty of Maryland a Committee on Public Instruction was established whose duty it was to enlighten the public in matters pertaining to the public health. During its first year the work of this committee was carried on largely by lectures, a series of so-called "major lectures" being given by leading medical men on a variety of health topics of public interest, while an equally important work was carried on among the various social organizations, such as church societies and women's clubs, through the medium of "minor lectures." An educational campaign has now been instituted through the newspapers. Arrangements have been made to furnish each of the two leading publications of Baltimore with a weekly health bulletin on subjects of public interest and of value for the preservation of public health and the prevention of disease. These bulletins have appeared from time to time in the Sunday papers and have attracted much attention, being issued "under the jurisdiction of the Medical and Chirurgical Faculty of Maryland." After carefully considering whether these articles should be published anonymously or signed by the writers, it was decided to publish them as coming from the Medical and Chirurgical Faculty.

The method followed by the Maryland Society is an excellent one and should be imitated by many other state associations. It is in harmony with the recommendations of the House of Delegates of the American Medical Association.

Massachusetts Forbids Objectionable Advertising.

The following law was passed by the Massachusetts Legislature at its last session:

AN ACT TO PROHIBIT THE DISSEMINATION BY ADVERTISEMENTS OR OTHERWISE OF INFORMATION CONCERNING CERTAIN DISEASES.

Be it enacted, etc., as follows: Whoever publishes, delivers, distributes or causes to be published, delivered or distributed, any advertisement, statement or notice, other than a label which is attached to a bottle or package of medicine, or which is contained in a sealed package of medicine, describing the causes, symptoms, details or effects of a venereal disease, or of a disease, infirmity or condition of the sexual organs, for the purpose of calling attention to or advertising a person or persons from whom, or an office or place at which, information, treatment, or advice may be obtained concerning such diseases or conditions, shall be punished by imprisonment for not more than six months or by a fine of not less than fifty nor more than five hundred dollars, or by both such fine and imprisonment. But the prohibitions of this act shall not be deemed to apply to the printing or delivering in sealed packages outside of this commonwealth of books, pamphlets or circulars containing such advertisements; nor to newspapers printed outside of this commonwealth.

Campaign for a New Law in Pennsylvania Inaugurated.

The Philadelphia Ledger contains, July 21, an extended outline of the plan of campaign adopted by the physicians of Pennsylvania in an effort to secure adequate medical laws for the Keystone State. At a meeting at Willow Grove Park, Philadelphia, July 22, an address was made by Dr. Joseph D. Bryant, ex-president of the American Medical Association, on "Medical Legislation." It is said that one of the recent occurrences which has aroused professional sentiment along this line is the murder of Dr. W. H. Wilson, who was apparently for a number of years engaged in a lucrative and extensive illegal practice. Following the notoriety occasioned by his death, an investigation was undertaken which shows that "Dr." Wilson was never registered in the state of Pennsylvania and had been practicing for years in violation of the existing law.

The *Ledger* states that an effort will be made to establish a single examining board which shall demand the same standard of proficiency of all applicants for license to practice in the state regardless of the school to which they belong or of the system of treatment which they intend to follow. The fight will be particlarly waged against the existing eclectic examining board, which is said to license men who have been rejected by the other boards or could not possibly secure a license in any other way. An effort will also be made to specify conviction for a felony as one of the grounds for revocation of license.

Any improvement or amendment of the existing medical practice act of Pennsylvania will be hailed with approval by those interested in the proper and effective restriction of the practice of medicine. It has long been known that the medical practice act of Pennsylvania was utterly inoperative. The fact that any individual could keep up a lucrative and disreputable line of practice for years in the largest city in the state without ever being detected is sufficient comment on the value of the law as it stands. One fatal defect in the present medical practice law of Pennsylvania is the triple system of boards, each of which gives examinations and passes candidates for a license without regard to any action taken or standard established by the other two boards. But the vital objection to the present law is the complete absence of any effective system of registration. The examining boards do not preserve any records of the applicants whom they pass, since these names are simply endorsed and turned over to the medical council. The medical council preserves no record at all, in fact, this council is made up of an equal number of physicians and laymen, the latter apparently considering their official duties most unimportant and unworthy of serious attention The license is not legal until registered with the prothonotary (or county clerk) of the county in which the licentiate intends to practice. Not the slightest attempt is made by the examining boards, the medical council or the county officers to keep or preserve any records which will be of practical value As it can not be shown in any case that a given individual is not legally qualified to practice medicine in the state, it is manifestly useless to attempt any prosecutions for violations of the act

The result is that the law is practically a dead letter and is not of the slightest value to the people for whose protection it was supposedly enacted *There is not to day in the state of* Pennsylvania a single official, either layman or professional who has the slightest idea how many physicians are legally qualified to practice medicine in the state, neither is there any place in the state where information can be obtained as to who have a right to practice The only complete copy of the existing records regarding the medical profession of the state of Pennsylvania is in the vaults of the American Medical Association and this is necessarily imperfect owing to the slipshod manner in which the county officials have kept the records

It is a disgrace to the state of Pennsylvania that such a law should ever have been enacted or that having been enacted, it should be allowed to remain on the statute book It is to be hoped that this condition of affairs will be speedily and effectively remedied at the next session of the legislature

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Review of Medical Organization in North Carolina

The presidential address of Dr J Howell Way, delivered at the fifty fifth annual session of the Medical Society of the State of North Carolina, on "Random Notes on the History Aims and Purposes of the State Medical Society," appears in the July *Charlotte Medical Journal* After some preliminary remarks and a review of the early days of the organization and of the eminent men who founded and conducted the state society in past years, Dr Way considered the three periods of greatest activity in medical organization, namely the closing years of the eighteenth century, when a considerable number of state medical societies were organized and medical colleges established, the middle of the nineteenth century, when the American Medical Association was organized and a number of other state associations came into existence and the present movement for medical organization

In considering the early history of the Medical Society of the State of North Carolina, Dr Way brought out the interesting fact that in 1850 a system of county medical societies, subordinate to the state society and sending delegates to the annual meeting, was organized in North Carolina, under the presidency of Dr Knox He says

> We have merely reverted to primal principles or in other words we are now building up the medical organization of the state from the foundation upward instead of from the top downward The division of our present society session into a House of Delegates and the General Meeting was the inevitable logical and necessary result of activities which greatly increased our annual attendance Our House of Delegates, the legislative and business body of the society, being made up of the elected representatives of the local profession from every section of the state certainly gives the fairest consideration of business propositions and in voting in the various elections each section of our great state association votes exactly its proper and legitimate strength, thus eliminating the possibility of men residing within a radius of 50 miles or less of the society's meeting place exercising undue influence in the society's affairs The state association in 1850 recommended the enactment of a law providing for a general registration of births deaths and marriages—certainly a worthy suggestion and one which after fifty eight years is still a long felt want

In 1860 there were forty county societies represented at the state meeting This splendid and ideal organization was disrupted by the Civil War

Reviewing the State Board of Medical Examiners, Dr Way summarizes the laws adopted at different times. In 1859, after several unsuccessful attempts, a medical practice act was placed on the statute books and is still in force The penalty clause was added in 1885 and the registration clause in 1888 The original law placed the selection of the Board of Medical Examiners in the hands of the medical society of the state, with the added provision "except when the legislature chooses to exercise this right"

Dr Way also calls attention to a decision of the state Supreme Court bearing on the validity of sectarian medical legislation He says

> There is absolutely no more excuse or reason for the existence in North Carolina of a state board of medical examiners to examine and to certify to the professional capacity of medical practitioners of electro therapeutics or hydrotherapy or ophthalmology or any other special method or theory of practice than there exists the necessity of a special examination before the supreme court of attorneys applying for state license, on particular methods of professional procedure in practice about which even the best lawyers may have diverging views There yet exists a stigma on the science of medicine in North Carolina irremovable until the last vestige of sectarian medicine practice legislative enactment is erased from our statute books and all individuals essaying the practice of healing the sick men, women and children are required to stand the same examination on the formation, nature character and diseases of the human machine they propose to treat

Dr Way's address should be read by all those interested in medical organization or in doubt as to its effectiveness

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POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR JOHN H BLACKBURN DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course]

Twelfth Month

THIRD WEEKLY MEETING

Diseases of Cornea

Suppurative Keratitis
Ulcers of Cornea Etiology varieties, treatment
Neuroparalytic and Lagophthalmic Keratitis
Non Suppurative Keratitis
Phlyctenular Keratitis Symptoms, treatment
Specific Interstitial Keratitis Signs of hereditary syphilis, physiognomy, teeth, lymph glands, bones, ears Symptoms, treatment in detail
Non specific Interstitial Keratitis Causes, symptoms
Vascular Keratitis, Pannus Pathology, symptoms, treatment

Diseases of Iris

Iritis Varieties (a) serous, (b) plastic, (c) suppurative, gummatous and tubercular
Symptoms Pain, photophobia, loss of vision Changes in form and appearance of iris

FOURTH WEEKLY MEETING

The Eye During and After the Exanthemata

Varieties of lesions which may occur and treatment of each
Careful observation necessary whether eye is affected or not
Advice by attending physician

The Diagnosis of Cataract.

General and partial cataracts
Congenital, traumatic, secondary, senile cataract
Diagnosis symptoms and physical signs
Differential diagnosis
Care and advice by family physician

The Diagnosis of Glaucoma

Importance of immediate recognition and attention
Primary and secondary Acute subacute and chronic.
Symptoms and physical signs General symptoms

Foreign Bodies in Eye.

Superficial, under lid and on cornea.

Deeply imbedded in cornea.

Punctured wounds of cornea and other coats.

Foreign bodies entering globe, (a) remaining, (b) not remaining.

Penetrating wounds of cornea and other coats.

When to enucleate, and when to try to preserve vision and ball.

Society Proceedings

COMING MEETINGS.

American Public Health Association, Winnipeg, Can., Aug. 25-28
American Acad. of Ophthal. and Oto Laryng., Cleveland, Aug. 27-29.
Wyoming State Medical Society, Sheridan, Aug. 28
New Mexico Medical Society, Albuquerque, Sept. 2-3
Washington State Medical Association, Walla Walla, Sept. 2-4.
South Dakota State Medical Assn., Yankton, Sept. 2-4
Medical Society of the Missouri Valley, Council Bluffs, Sept. 3-4.
Colorado State Medical Society, Denver, Sept. 8-10.
Med. Soc. of the State of Pennsylvania, Cambridge Spgs., Sept. 14-17.
American Assn. of Obstet. and Gynecol., Baltimore, Sept. 22-24
American Dermatological Association, Annapolis, Sept. 24-26
Kentucky State Medical Association, Winchester, Sept. 23-25
Con. of State and Prov. Bds. of N. A., Washington, Sept. 25-26
Internat'l Congress on Tuberculosis, Washington, Sept. 21 to Oct. 12.

MEDICAL SOCIETY OF NEW JERSEY.

One Hundred and Forty-second Annual Meeting, held at Cape May, June 18-19, 1908.

New Officers.

A list of the officers elected for the ensuing year appeared in THE JOURNAL, July 18, 1908, page 232.

Joint Affections in Children.

DR. WILLIAM K. NEWTON, Paterson, in the oration on medicine, gave two reasons for the ignorance of the general practitioner regarding infectious arthritis and for the lack of fulness and definiteness in the literature on this subject: the custom of calling all cases of arthritis rheumatism, and the attempt to group all these joint affections under the title of Still's disease. Infectious arthritis, he said, might be the result of any of the infections with pus-producing organisms. He excluded those caused by tuberculosis, syphilis, and acute rheumatic fever, and confined his attention to the less understood cases of infectious arthritis, considering their etiology, pathology and symptoms.

Endothelioma of the Pleura.

DR. HENRY S. PATTERSON, New York, reviewed the literature of the subject, including ninety-six cases. Malignant new growth of the pleura should be suspected when bloody fluid is found in the chest. A number of conditions must be excluded in making the diagnosis, particularly tuberculosis, aneurism and primary new growth elsewhere. Persistent bloody fluid, not tuberculous, with progressive emaciation, usually accompanied with fever, made a suggestive picture. Sometimes cells were found in the fluid. The only absolutely sure method of diagnosis was by making a microscopic examination of tissue that had come to the surface by extension of metastasis. The disease must be treated at first by aspiration. The skin might be frozen with ethyl chlorid, care being taken to allow the frost to wear off before puncturing; otherwise the needle would have to go through a tough, leathery layer and run the chance of bending or breaking. The subsequent pain was relieved by local applications and by the coal-tar products, with or without morphin. In the last stages morphin to the point of toxic effect was indicated. Symptoms referable to metastasis must be treated as they arise. The only justification for surgical treatment was the presence of purulent effusion.

DISCUSSION.

DR. PHILIP MARVEL, Atlantic City, asked whether the malignant growths of the pleural cavity are more liable to metastases than are similar tumors elsewhere.

DR. CHARLES A. ROSENWASSER, *Newark, thought it important* to do all that could be done to afford relief in cases pronounced inoperable, and asked whether Dr. Patterson's experience with methylene blue in cases of inoperable sarcoma had been that the patients had been made more comfortable by its use, and whether life had been prolonged.

DR. N. L. WILSON, Elizabeth, said that in sarcoma of the antrum he thought it better to let the tumor alone and keep the patient under the influence of an opiate.

DR. H. S. PATTERSON said that he would never have been able to recognize the condition in this case had it not been for an article by Dr. Delafield reporting similar cases. The diagnosis was confirmed at autopsy. Theoretically, one would imagine that the pleura, being so rich in lymphatic drainage, would form a primary site from which metastases would be frequent and extensive; but, on the contrary, the cases in which metastases was mentioned represented only about 20 per cent. of the total. He had had no experience with methylene blue in this class of cases, and stated that his reference to malignant growths of the antrum was not in relation to operative interference, but simply as one of the means of eliminating primary growths elsewhere than in the pleura.

Medical Expert Testimony.

DR. EDWARD J. ILL, Newark, in his presidential address expressed regret that the Governor of New Jersey had seen fit to appoint but one medical man on the State Board of Health, this one being a retired physician. He stated that the society is working under a disadvantage, owing to a lack of competent legal advice, and suggested that it engage counsel to defend the members in malpractice suits and do other necessary legal work. He thought that damage suit expenses should be paid by the society; because the accused practitioner was defending not only himself, but every physician in the state. The difference between an ordinary and an expert witness, he said, was that one simply states a fact and the other expresses an opinion. An ordinary witness who does not speak the truth might be prosecuted, but an expert could not be reached by the law for expressing a false opinion. The opinions of medical experts carried no weight, because even those who were honest were discredited by what had become a pernicious system. Dr. Ill thought that the law should be amended so as to make such scandalous conflicts of opinion impossible. The man who sold his opinion, he said, should not be allowed to remain a member in good standing in the New Jersey Medical Society. The profession should put an end to a system that was already dead, in that it had outlived its usefulness.

When Shall the Physician Distrust His Own Judgment in Surgical Matters.

DR. MAURICE H. RICHARDSON, Boston, in the oration on surgery, said that it was most important that the diagnosis be made early enough to check the disease in the beginning; and on the shoulders of the physician, because he was the first in the field, rested the responsibility as to whether it should be treated medically or surgically. The errors of surgery were often the result of a too favorable prognosis based on a wrong diagnosis; and the largest proportions of these wrong diagnoses *were due to physicians, who were not experts in the* diagnosis of tumors. If there were strong possibilities of a serious or fatal lesion that the differential diagnosis could not rule out and for which the only hope lay in immediate surgical intervention, then must the physician distrust his own opinion, even if that opinion is favorable. It was common for the surgeon to shift to the physician the responsibility for surgical failure. When there was any doubt as to the placing of the responsibility, the surgeon should be eager to assume the burden. There were many cases, also, in which the physician should distrust not only his own judgment, but that of the surgeon. He should distrust the judgment of any surgeon who had failed to make a thorough examination. Surgeons did not always appreciate the weight of responsibility that the physician felt toward the family of his patient in recommending an operation. Dr. Richardson thought that the more intimate becomes the association between these two branches of medicine, the better would be the results.

(*To be continued.*)

Medicolegal

Need File Certificate Only in County of Residence.

The Court of Criminal Appeals of Texas says, in Person vs. State, that Article 440 of the penal code of that state of 1895 provides: "If any person shall hereafter engage in the practice of medicine in any of its branches or departments for pay, or as a regular practitioner, without having first filed for record with the clerk of the district court in the county in which such person may reside or sojourn a certificate from some authorized board of medical examiners, or a diploma from some accredited medical college, he shall be punished as prescribed in Article 438." It was evidently the purpose and intent of the legislature that, for the protection of society, all persons undertaking to practice medicine as physicians, or act as physicians, should, before being permitted so to do, be required to furnish evidence of their skill and preparation by being compelled to file in the office of the district clerk the evidence of their qualification, such instrument, either certificate or diploma, to be filed in the county of their residence, or where at the time they were sojourning. The court thinks it clear that where the physician had once complied with the law by filing a certificate or diploma in the county where he resides that he would and should be permitted to accept professional calls and practice in any adjacent county, and as for that matter throughout the counties of the state where his services might be needed, and that it would not be required of him that he must file such certificate or diploma where he might be called after he had, in the terms of the law, filed such diploma in the county where he resided, or where at the time he might sojourn.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal.

August 1.

1 *Treatment of Laryngeal Stenosis, Including Intubation by the Dorsal Method. L. Fischer, New York.
2 *Method for Preventing Infection from the Skin During Surgical Operations. J. S. Horsley, Richmond, Va.
3 Sarcoma of the Tonsil. J. E. Rhodes, Chicago.
4 Syphilis Communicated in Assault and Battery. H. G. Watson, New York.
5 Dies Caniculares (concluded). J. Knott, Dublin, Ireland.
6 *The Solvent Action of the Sulphocyanates on the Lime and Magnesium Deposits in the System. W. Bentley, Athens, Ohio, and B. R. LeRoy, Athens, Ohio.
7 Impetigo Contagiosa. R. T. Sutton, Kansas City, Mo.

1. **Laryngeal Stenosis.**—Fischer discusses acute laryngeal stenosis. This, he says, is never found in syphilis, the history of the stenosis in which is of an altogether different type. The bacteriologic diagnosis of acute stenosis is not always easy, but the treatment is identical, whether the organism be the Klebs-Loeffler bacillus, the influenza bacillus, or the streptococcus, viz.: mechanical relief of the respiration. Fischer cites as a diagnostic point that, if a child appears in good health and awakens suddenly at night without having given evidence of disease the day before, such croup is usually of the catarrhal type and is not to be classed with that serious form of laryngeal stenosis due to diphtheritic pseudomembranes. Diphtheritic laryngeal stenosis usually appears slowly. It comes on gradually. A child with diphtheria usually shows malaise during the period of incubation and anorexia; also hoarse, barking cough, labored breathing, swollen glands of neck, rapid pulse, usually not very high temperature. After the respiratory difficulty the worst effect is on the heart. Fischer then discusses intubation, which should not be postponed in private practice, as can be more safely done in a hospital with expert assistance always at hand. The pulse must be the guide as to the urgency of operation. A very rapid pulse, or one becoming thready, and an intermittent pulse are danger symptoms which demand relief. Procrastination means death, hence it is wise not to resort to emetics and thus to delay the chances of recovery. In the treatment three important points should be remembered: They are: 1, To relieve the stenosis by intubation and thereby prevent asphyxia; 2, to inject sufficient antitoxin to neutralize the toxemia present; and, 3, to restore inactive functions by *nutrition and by hygienic means, also giving the required* amount of stimulation to strengthen the heart and stimulate all the emunctories to activity. Fischer describes the technic of the dorsal method of intubation. He discusses false passages and says that if a false passage has been produced and we are unsuccessful in our attempts at intubation, then it is much wiser to resort to tracheotomy, rather than to risk the danger incident to exhaustion from both the deficient oxygenation and the heart strain in the struggling child.

He considers recurring laryngeal stenosis after intubation, which, he says, can be summed up in the single word "traumatism," and paralysis of the vocal cords. The prevention of recurring laryngeal stenosis in ordinary membranous diphtheria calls for gentleness, removal of tube every five days, and *the O'Dwyer plan of immersing a rubber tube in a hot solution* of gelatin containing 25 per cent. of powdered alum. *Alternative intralaryngeal medications are given.* If an unskilled operator must intubate, then a hypodermatic injection of 1/100 grain strychnin or ½ grain tablet caffein sodium benzoate may be given prior to the operation. It is also wise to have a mustard foot bath ready to stimulate the circulation in case of collapse. If the circulation does not improve after the mustard foot bath given at a temperature of 100 F., then a hot saline colon flushing at a temperature of from 115 to 120 F. may be given. In the treatment of extubation with recurring laryngeal stenosis, especially in a very nervous and fretful child, Fischer orders some antispasmodic treatment 24 hours before extubation. From 5 to 10 grains of sodium bromid, depending on the age of the patient, may be given in water or in milk, every 3 hours. Codein in doses of from 1/10 to ¼ grain, depending on the age, may be given during the evening before extubation, to insure rest and quiet to the nervous system.

2. ***Prevention of Skin Infection.**—To avoid infection in* operation from the deeper layers and cut edges of the skin, Horsley tucks around the edge of the cut skin a towel folded in the middle. The towel is fastened by small tenacula or small safety pins; usually three on each side are sufficient. A short distance from each angle of the wound the two towels are clamped together with a hemostatic forceps.

6. **Solution of Lime and Magnesium Deposits.**—Bentley and LeRoy, finding, from a study of the saliva (*New York Med. Jour.*, March 7, 1908, abstracted in THE JOURNAL, March 21, p. 991), that there is always precipitation of the calcium and magnesium, held in solution in normal saliva, by the increased content of ammonia and a simultaneous decrease or entire absence of the sulphocyanates, have made a study of these substances. They have used sodium sulphocyanate (the least poisonous to man of all the sulphocyanates) in small doses in arteriosclerosis, with prompt and rapid relief. LeRoy has never had occasion to give more than one grain (.065) of the drug at a dose, often not more than a fraction of a grain well diluted. They are making an exhaustive study of the solvency of lime and magnesium calculi, and think it safe, even now, to say that in this drug we have a remedy which will not only slowly dissolve the already formed stone, but will prevent the formation of the calculi, or other deposit in the system when the sulphocyanids are present in sufficient quantities. They give this caution: "Do not give the sulphocyanates for any length of time, or in large doses, without carefully watching the patient and making repeated measurements of the blood pressure with the sphygmomanometer, and keeping an accurate record of the case; in this you will learn that large doses of the drug will not be called for, nor will you give them when you will have learned with what ease small doses will do the work." The details of laboratory experiments as to the solvency of calculi are given.

Boston Medical and Surgical Journal.

July 30.

8 *Occurrence of Infantile Paralysis in Massachusetts in 1907. R W. Lovett, Boston
9 *Osteosarcoma of Knee Joint. E G. Abbott and T. J. Burrage, Portland, Maine
10 *Abuse of Alcohol in Treatment of Children's Diseases C W. Townsend, Boston
11 Modification of the Drigalski Conradi Litmus-Lactose Agar, for Isolation of *B. Typhosus*. D Gregg, Boston.

8. **Infantile Paralysis.**—Lovett analyzes carefully the literature and investigations on the subject, and presents briefly the data and conclusions suggested as to the etiology of the disease. He then reviews the cases that occurred in Massachusetts in 1907 in regard to distribution, relation to traumatism and condition preceding onset, and sums up the evidence in regard to etiology. The sudden febrile onset and the character of the onset suggest infection, and there is a general impression that the disease is infectious, but the case is not proved by positive bacteriologic data, so far collected, and most bacteriologic examinations are negative. But in this case negative evidence does not disprove the theory of infection, *for the organism present, if one exists, may liberate a* toxin and disappear. The seasonal occurrence, the age of the children, and the frequent association of intestinal disturbance with the onset suggest some intestinal infection as the possible source of the disturbance. The disease follows the curve of summer diarrhea as to age and season, and follows the curve of cerebrospinal meningitis as to neither. From the evidence it seems reasonable to suspect that some bacillus, probably an anaerobic one, reaches the intestines in milk and there liberates a toxin which is absorbed and carried to the spinal cells by the blood current. Hence, the findings in the cerebrospinal fluid withdrawn by lumbar puncture are negative in most cases It can not be regarded as certain, however, that infantile paralysis is always caused by the same organism, nor even that it is a pathologic entity. It may be simply the clinical expression of the reaction of the spinal cord to one of the several causes, of which infection may well be one. A similar pathologic condition has been seen to arise from lead poisoning, from the experimental injection of bacteria in rabbits, and from the injection of toxin in guinea-pigs Allowance must also be made for the possible influence of traumatism, dampness, overfatigue, the exanthemata, and foci of pyogenic infection, as possible causes of infantile paralysis, or a disease indistinguishable from it. At present, he states, we must observe and study and collect material, remembering that we may be dealing (1) with a specific infectious disease; (2) with an infection due to one of several organisms, or (3) with a disease of more than one origin, not always necessarily infectious The data contained in this report are not sufficient to establish the theory of contagion, although the distribution of the disease, its spread from foci, the involvement of contiguous towns, the spread along lines of most frequent travel, and the suggestive histories given may well warrant us in suspecting it and collecting further data, and no harm could arise from the isolation of these patients from other children during the acute attack.

9. **Osteosarcoma of Knee.**—Abbott and Burrage discuss this condition at large and report a case. They conclude that a radical measure, such as amputation, for the central variety of sarcoma of knee-joint is advisable, because (a) early and high amputation gives the largest percentage of recoveries without recurrence; (b) treatment by the use of toxins, which seems a useful adjunct, though when used alone, according to present statistics, gives only 15 per cent. of cures in all varieties, can not be entirely depended on; (c) immediate death following operation seldom occurs if the previous condition of the patient is fair; (d) resection is of doubtful benefit, and where there is so much at stake should not be attempted.

10. **Alcohol for Children.**—Townsend contends for the utmost caution in using alcohol in children's diseases. He quotes a case in which he was called in consultation and found a 22-months-old infant had been having a dram of whisky every hour, originally prescribed during an acute attack of pneumonia, besides an alcoholic proprietary food. The diagnosis of meningitis was modified, the whisky stopped and the child did well.

Medical Record, New York.

August 1.

12 *Tuberculosis in Connecticut, Especially in Rural Connecticut. S. J. Maher, New Haven.
13 Autochthonous Urethral Calculi. H. A. Fowler, Washington, D. C.
14 *The Esophagoscope as a Diagnostic and Therapeutic Aid in Esophageal Obstruction. J. S Myer, St. Louis
15 Surgical Technic Without the Use of Antiseptics; With Report of Forty one Consecutive Successful Abdominal Operations. W. H. Dukeman, Los Angeles
16 *Epilepsy in Private Practice, Especially That from Reflex Causes. C. G. Polk, Pensauken, N. J.

12. **Tuberculosis in Connecticut.**—Maher gives an interesting account of observations and researches on tuberculosis in rural Connecticut, and draws the following conclusions:

1 Tuberculosis was a disease of the Indians of Connecticut before the white man came

2 Human tuberculosis has occurred in all parts of rural Connecticut—highland, lowland and plain.

3. There is considerable evidence to show that in rural Connecticut human tuberculosis occurs most frequently in badly drained districts, and in houses with damp cellars

4. The reports received do not support the view that in rural Connecticut cases of consumption occur frequently in close proximity to insanitary barns or coops

5 While the preponderance of testimony is that in rural Connecticut only a minority of cases of consumption have been followed by other cases in the same house or the same family, the evidence in favor of the hypothesis of "consumption houses" and "consumptive families" is often very striking and is deserving of careful consideration.

6 The density of the population of the counties of Connecticut bears no relation to the tuberculosis death rate of said counties.

7 There has been a very marked decline in the tuberculosis death rate for the past fifty years, and this decline was as steep, but not so regular, before the discovery of the tubercle bacillus as it has been since.

14 **The Esophagoscope.**—Myer describes the history of esophageal examination and briefly refers to the anatomy of the esophagus and the difficulties of its examination. He reports cases of foreign bodies and other forms of esophageal obstruction, illustrating the usefulness of the esophagoscope as a diagnostic aid. He uses the Killian instrument, the patient being in the sitting posture, and considers anesthetization, though not always necessary, a very wise procedure. He describes the technic.

16. **Epilepsy.**—Polk points out that he can not find a single course of treatment recommended by high authorities that has not been set aside as valueless by other authorities entitled to equal respect and credence. He insists that reflex epilepsy does exist, and holds that the denial of that fact by some, causes many cases of reflex epilepsy to become permanent, when in earlier stages it would have yielded to correction of defects The general treatment he does not discuss, as it is so various and disputed, and each practitioner will select for himself and be guided by his own results. The hygienic treatment he holds of equal importance with the medicinal, and he says that a course of treatment along comprehensive lines should be mapped out and the patient be required to give reports as to his adherence to it. A copy of the following rules may be given him. They do not cover every case, but there can be no mistake in the observance of them:

Have meals regularly, with the last meal of the day early and light Do not continue eating until there is a sense of fulness Do not eat peas, beans, veal, much meat, or cereals A vegetable diet is the best. Fish and milk are permissible Use as little salt in the food as possible and forego tea and coffee. *Do not eat much at one sitting.* Keep the bowels free and the intestinal tract aseptic by the use of some antifermentative, like salol or betanaphthol Flush the colon frequently. Take warm salt baths, not remaining in the water sufficiently long to fatigue Sleep with the head high and keep the feet warm at all times and especially at night. See that any defects in the eyes are corrected and do not use the eyes a long time without resting. If glasses are worn, have the frames straightened at regular intervals Take as much out door exercise as possible without fatigue. Spinal douches and massage should be taken regularly. If seizures come early in the day take 15 grains of sodium bromid before retiring

Lancet-Clinic, Cincinnati.

July 11.

17 Colorado and the Eastern Pulmonary Case W. A Campbell, Colorado Springs, Colo
18 Pregnancy When Complicated by Tuberculosis H A Miller, Pittsburg.
19 Tracheobronchoscopy, Esophagoscopy and Gastroscopy J. W Murphy, Cincinnati.
20 Some Features of Femoral Hernia. W. D Gaines, Cincinnati
21 Obscure Fractures *Discovered* by *Roentgen Examination* S. Lange, Cincinnati.

July 18.

22 *Mortality and Morbidity of Child-Bearing Women Could be Reduced to Minimum if Maternity Hospitals Were More in Favor With Profession and Laity. E. G. Zinke, Cincinnati.
23 Sympathetic Ophthalmia. L. D. Brose, Evansville, Ind.
24 Neurasthenia Gastrica, Nervous Dyspepsia or Dyspeptic Symptoms Due to Eye-Strain. C. R. Jones, Pittsburg.
25 Necessity of Added Emphasis in Teaching of Therapeutics and Pharmacology. W. A. Dickey, Toledo.
26 Penis Clamp in Treatment of Acute Gonorrhea. J. W. Miller, Cincinnati.

July 25.

27 Tuberculosis of Larynx. A. B. Thrasher, Cincinnati.
28 Résumé of Gallstone Factors. R. A. Bate, Louisville, Ky.
29 Gallstones as an Etiologic Factor in Diabetes. J. C. O'Day, Oil City, Pa.
30 Traumatic Pulsating Pleurisy. C. B. Van Zant, Denver, Colo.

22. **Maternity Hospitals.**—Zinke argues in favor of more maternity hospitals. There is an indifference in the profession to the study of obstetrics, a subject which involves grave responsibility, hard work, long hours and little or no pay. Hence many practitioners abandon midwifery in favor of less laborious and more profitable fields in medicine and surgery. Others, never intending to practice it, study it only so far as to meet the requirements for graduation. Others, again, in their early career, meet with only easy cases, and so believe themselves masters in obstetrics, requiring no further study than the mere accumulation of experience. Hence they persistently refuse to send obstetric cases to maternity hospitals, notwithstanding the dangerous environment of the home and the difficulty there of meeting complications. Zinke emphasizes the fact that "every physician, no matter how favorable his experience with obstetrics may have been, should always realize that pregnancy, from the beginning to the end, is, under the most favorable conditions, an event of grave importance." The hygiene of pregnancy, though often of the utmost significance, is ignored. The same may be said of pelvimetry, the diagnosis of the attitude of the fetus in utero, as well as the preparation for labor previous to the event. He holds the hospital the safest place for women to pass through the ordeal of labor, and asks why we hesitate to do with the child-bearing woman what it is now the custom to do with all difficult and complicated cases, medical and surgical, while the patient is yet in good condition. He discusses the reasons of the objections of the profession and the laity to the practice of obstetrics in hospitals.

American Journal of Obstetrics, York, Pa.

July.

31 *General Administration of Anesthetics. J. M. Baldy, Philadelphia.
32 Immediate vs. Deferred Operation for Intra-abdominal Hemorrhage Due to Tubal Pregnancy. J. E. Janvrin, New York.
33 *Id. E. E. Montgomery, Philadelphia.
34 *Id. C. C. Frederick, Buffalo, N. Y.
35 *The Time to Operate in Intra-abdominal Hemorrhage Due to Tubal Pregnancy. W. P. Manton, Detroit.
36 *Forty-one Cases of Tubal Pregnancy, with Two Deaths. A. L. Smith, Montreal.
37 *Immediate vs. Deferred Operation for Intra-abdominal Hemorrhage Due to Tubal Pregnancy. H. J. Boldt, New York.
38 *Pernicious Anemia and Pregnancy. P. Findley, Omaha.
39 *Hospital Histories. R. L. Dickinson, Brooklyn.
40 *Hospital Gynecology. R. L. Dickinson, Brooklyn.
41 *Second Report on Operations for Relief of Pelvic Diseases of Insane Women. L. Broun, New York.
42 *Intrapelvic (Subpubic) vs. Abdominal Method of Dealing with Mechanical Obstruction to Delivery. R. C. Norris, Philadelphia.
43 *Indications for Cesarean Section. B. C. Hirst, Philadelphia.
44 *Hygiene of the Eye in School Children. W. M. Carhart, New York.
45 *Recent Studies on Scarlet Fever. A. W. Williams, New York.
46 Symptomatology and Diagnosis of Lobar Pneumonia and Bronchopneumonia in Children. L. Kerr, Brooklyn.

31 and 33 to 37. Abstracted in THE JOURNAL, June 20, 1908, pp. 2100 and 2101.

38 to 43. Abstracted in THE JOURNAL, July 4, 1908, pp. 69 and 70.

44. **Hygiene of the Eye in School Children.**—Carhart summarizes his paper as follows:

1. The increase during late years in the number of children wearing glasses is due not to an increase in the number of weak or diseased eyes, so much as to the greater strain on the function of vision necessitated by our more extended use of the eyes for close work in the complex civilization of the present day.
2. The normal child is born hypermetropic and without astigmatism. The myopic child is either defective from birth or has acquired myopia from the stress of eyestrain through the "turnstile of astigmatism." Astigmatism is not congenital, but is practically always acquired in the normal child during the early years of life by excessive strain on the muscles of accommodation.
3. Kindergarten and primary work should be so arranged as to avoid strain on the muscles of accommodation of the eye in the plastic years of childhood. Hence, sewing and all weaving exercises should be limited in amount, if not absolutely eliminated.
4. Systematic study should be begun only when the delicate and soft tissues of the child's eyes have attained sufficient formation to resist distortion on moderate use of the accommodation. This means, that prolonged close work should not be allowed until the age of 10 or over. A child beginning systematic study at that age will, with suitable care, be able at 16 or 18 to acquire all the knowledge possible to its more precocious companion, and will have the inestimable advantages of normal eyes and healthy physique.
5. No young child should be encouraged to compete with its companions for prizes. Mental and ocular overstrain are the inevitable results of such educational monstrosities. In the primary schools especially there should be no grading of the children.
6. A child incapable of the prolonged use of the eyes at the proper age should not be classed as culpably lazy. In the majority of cases there will be found uncorrected refractive error.
7. Inability to concentrate the mental attention, and deficient powers of observation are often caused by bad visual memory resulting from eyestrain.
8. The symptoms and physical signs of eyestrain in children can be easily recognized, and there is no more brilliant success in medicine than that which follows the correction in children of refractive overstrain.

45. **Scarlet Fever.**—Williams refers to our lack of definite knowledge of scarlet fever, notwithstanding that it has been recognized as an entity since Sydenham's time. We do not know the chief site of the virus, and hence the chief source of infection; or how long the virus may remain infective after separation from the patient; or the exact period of incubation; or any real pathognomonic symptoms, for the rash is seen in other cases—e. g., after serum inoculation; desquamation may occur after any erythema, and the enlargement of papillæ on the tongue, which is regarded as pathognomonic, is often so slight as to be difficult to make out, and, moreover, it has been reported as occuring in other diseases. The discussion over Duke's "fourth disease" demonstrates the uncertainty. Little work has been done on the minute pathology. The only constant change is a hyperplasia of lymphatic tissue over the whole body. The only characteristic change is the bodies found by Mallory in 1903, and these have so far received but little corroboration. Field has examined by an improved technic skin from 20 living scarlet-fever patients and from 10 autopsies, with a number of controls, and has come to the conclusion that most, if not all, the bodies are degenerations of the cytoplasm of the host cells. None were found in living skin. The author has completed an examination of skins from 17 living patients and 33 autopsies, with 9 controls. She reports the findings and states that so far there is no evidence that they are living organisms; neither has she been able to demonstrate anything like a tiny organism within the larger bodies. She can not, therefore, agree with Prowazek in including scarlet fever in the group of diseases produced by what he calls "chlamydozoa." Future work is contemplated on the exudates and the superficial tissues of the mouth and nose, which are regarded as more promising sources of information. The streptococcus undoubtedly plays an important rôle in the secondary lesions and sequelæ of scarlet fever. The antistreptococcic treatment has been tried in too few cases to justify conclusions, but Williams regards the results so far as encouraging.

Military Surgeon, Carlisle, Pa.

June.

47 *Anti-Typhoid Inoculation in the British Army. Brevet Lieut.-Col. W. B. Leishman, Royal Army Medical Corps.
48 Operation for Radical Cure of Hydrocele by the Inversion of the Tunica Vaginalis. Major P. C. Fauntleroy, U. S. Army.
49 *Classification of the Effects of the Sun's Rays and of Artificial Heat. H. D. Corbusier, U. S. Army.
50 Diseases and Sanitary Conditions Among Alaskan Indians. Capt. P. C. Hutton, U. S. Army.
51 Ethyl Chlorid as a General Anesthetic in Minor Surgery. E. M. Blackwell, U. S. Navy.
52 Austro-Hungarian View of the Care of the Wounded on the Battlefield in Modern War. Staff Surgeon Bertold Reder, Vienna. (Translated by Capt. E. B. Vedder, U. S. Army.)

47. **Antityphoid Inoculation.**—Leishman describes the vaccine method adopted for antityphoid inoculation in the British army, under the following heads: 1, the method of preparing

and standardizing the vaccine; 2, the system adopted for carrying out inoculation; 3, the arrangements for the collection of statistics as to the results of inoculation. Two tables showing the incidence and mortality between the inoculated and uninoculated in the Seventeenth Lancers and the Royal Fusiliers, also the results of experimental work and particularly of antityphoid inoculation in seven large Indian stations from Jan 1 to June 30, 1907, are given.

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Wisconsin Medical Journal, Milwaukee.

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Colorado Medicine, Denver.

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Vermont Medical Monthly, Burlington, Vt.

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77 Intracranial Involvement in Acute Middle-Ear Suppuration B. H. Potts, Philadelphia.
78 *Thyroid Extract in Epilepsy and Migraine, apropos of Ten Cases A. Gordon, Philadelphia.
79 Treatment of Ptosis. W. C. Meanor, Beaver.
80 Importance and Value of Physical Therapeutics M. L. Barshinger, York.
81 *Penetrating Wounds of the Thoracic and Abdominal Cavities. W. Lathrop, Hazleton.
82 New Mechanical Devices in Treatment of Laryngeal Diphtheria: A New Laryngeal Forceps, A New Laryngeal Probang. E. Rosenthal, Philadelphia.
83 *Analysis of Gastric Contents After Gastroenterostomy C. R. Jones, Pittsburg.
84 The Misfortunes of Scientific Medicine. J. C. O'Day, Oil City

73. **Exploratory Laparotomy in Gastric Diseases.**—In the oration on surgery Rodman said that the early recognition of cancer is generally impossible without exploration, and may be so even with it unless the growth is removed. He has seen but one instance of an ulcer in any other part of the stomach than the pylorus which has undergone malignant transformation. He explains its frequency at the pylorus by greater irritation and friction and the fact that the acid chyme is thrown against it in volume and force. In addition to his own case, all that he could find in the literature of an ulcer not at the pylorus which had undergone malignant degeneration was one case by Cackovic.

74 and 75. Abstracted in The Journal, Oct. 26, 1907, p. 1465.

76. Abstracted in The Journal, Nov. 16, 1907, p. 1715.

78. **Thyroid Extract in Epilepsy.**—Gordon reports ten cases in which thyroid extract was used with beneficial effect in epilepsy and migraine.

81. Abstracted in The Journal, Nov. 9, 1907, p. 1624.

83. Abstracted in The Journal, Nov. 2, 1907, p. 1549.

Northwestern Lancet, Minneapolis.

July 1.

85 *Sondern's Differential Leucocyte Resistance Line in Diagnosis and Prognosis of Acute Appendicitis. L. B. Wilson, Rochester, Minn.
86 "Charcot Joint." F. E. Leavitt, St. Paul.
87 *Mental Contagion. A. S. Hamilton, Minneapolis.
88 Indications for Craniotomy. H. W. Jones, Minneapolis.

July 15.

89 Treatment of Gastric Ulcer. J. W. Bell, Minneapolis.
90 Study of the Metabolism in a Case of Diabetes. W. D. Sheldon Minneapolis.
91 *Surgical Necessities During Pregnancy and Labor. J. C. Litzenberg, Minneapolis.
92 *Surgical Necessities Following Labor. A. E. Benjamin, Minneapolis.

85. **Sondern's Differential Resistance Line.**—Wilson illustrates a modification of Gibson's standard chart for recording observations as to the leucocyte count and the estimate of polynuclear percentage as suggested by Sondern. He reports a series of observations, divided into two groups: A, those which come under observation on or before the third day, and, B, those which come under observation on or after the fourth day. These again are subdivided as follows: Class A into (1) cases of acute catarrhal appendicitis; (2) cases of early purulent appendicitis without walled-off abscesses, and (3) cases of chronic appendicitis without pathologic evidence of the real or imagined acute exacerbation. Class B is divided into (1) cases in which a well-marked-off abscess exists; (2) cases in which there is an imperfectly walled-off abscess, and (3) cases in which there is a very small and disappearing abscess. While drawing no sweeping conclusions, Wilson thinks the following statements justifiable: 1. Sondern's hypothesis, that the polynuclear percentage is an index of infection, the total leucocytosis an index of body reaction, and their proportional relationship an index of resistance, seems to be supported. The more important exceptions to this are in moribund cases and perhaps in children. 2. As practically applied in early appendicitis cases the disproportional polynuclear increase, i. e., a rising resistance line, indicates a more or less severe infection, which is not being properly cared for by the body. The higher and longer this line, the more serious the case. 3. A proportional polynuclear percentage or a disproportionate polynuclear decrease, if well marked, indicates mild or well-cared-for infection. 4. The value to the surgeon in early cases is but little, since in most early cases the patients are operated on anyway. It may be of some value negatively in indicating that the supposedly acute exacerbations of chronic appendicitis are not present. 5. In cases between the fourth and fourteenth days, the resistance line is of great value to the surgeon in indicating the patient's poor resistance and the necessity for immediate operation. The operative findings in these cases bear out the leucocyte determination with wonderful accuracy. 6. In cases like those in A. 3, a horizontal or falling resistance line indicates that the patient is taking care of the infection. If the infection is severe, as shown by a high though falling line, the patient may perhaps best be given medical treatment rather than submitted to operation. 7. When such a case as is indicated in B. 1 is being kept under observation, the resistance line should be determined daily, and should the line begin to rise the patient may be submitted to operation.

87. **Mental Contagion.**—Hamilton refers to the mental epidemics that have occurred in all ages, and urges the advisability of segregating the insane, the idiots and the imbecile, not only for their own sakes, but because of the unhealthy mental influence, which is otherwise constantly exercised on friends and neighbors. He reports cases to show the morbid influence of the insane or the abnormal on other minds whose power of resistance has from some cause become lessened.

91. **Operations During Pregnancy.**—Litzenberg sums up his considerations on this subject as follows: When operative conditions arise that would, if postponed, be dangerous to the health or life of a woman, the fact that she is pregnant should not deter the surgeon from operating, because, in fact, there is really little danger of interrupting pregnancy except in women who are excessively nervous. So tolerant to injury is the pregnant woman that extensive lacerated wounds of the abdomen and accidents violent enough to fracture the fetal extremities have occurred and pregnancy has gone on uninterruptedly. The condition calling for operation is usually more likely to endanger the pregnancy than the operation itself. Unless the demand for an operation be very urgent, the time which corresponds to the menstrual period must be avoided; and, as women seem prone to lose their babies at the third, fourth and eighth months, these should not be selected for operating. With these exceptions, surgery on the pregnant woman may be undertaken with little fear of unusually grave consequences.

92. **Surgical Necessities Following Labor.**—Benjamin says that labor may result in one or more of the following conditions, which he discusses seriatim: 1, Rupture of the uterus; 2, lacerated cervix; 3, lacerated perineum; 4, uterine displacement: (a) retroflexion, (b) retroversion, (c) prolapse; 5, prolapse of adnexa and uterus; 6, cystocele; 7, rectocele; 8, fistula. Among diseases that may arise, or being latent may be lighted up into activity, by labor he names: 1, Appendicitis; 2, salpingitis; 3, peritonitis; 4, septicemia; 5, ovarian cysts; 6, carcinoma; 7, tuberculous peritonitis; 8, gall-bladder disease; 9, uterine fibroids. These also he considers in detail. He draws the following conclusions: 1. It is time that the profession should recognize the importance of carefully investigating all cases of pregnant women with possible associated pelvic or abdominal disease. 2. It is certain that many diseases, such as appendicitis, gall-bladder disease, ovarian cysts and certain uterine fibroids, are better operated on during the pregnant state than after the symptoms are exaggerated by the traumatism of childbirth. 3. Women who have borne children may have had an irregular convalescence, due to the presence of pelvic disease that has been directly caused or exaggerated by labor. 4. When certain complications are manifest after childbirth their early recognition and operation often offer the safest prognosis. 5. Nearly all lacerations of the cervix, vagina and perineum are best repaired directly following the birth of the child. 6. Such repair often saves

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76 *Physical Defects of School Children, Causing Subnormal and Mentally Deficient Pupils. S. W. Newmayer, Philadelphia.
77 Intracranial Involvement in Acute Middle-Ear Suppuration. B. H. Potts, Philadelphia.
78 *Thyroid Extract in Epilepsy and Migraine, apropos of Ten Cases. A. Gordon, Philadelphia.
79 Treatment of Ptosis. W. C. Meanor, Beaver.
80 Importance and Value of Physical Therapeutics. M. L. Barshinger, York.
81 *Penetrating Wounds of the Thoracic and Abdominal Cavities. W. Lathrop, Hazleton.
82 New Mechanical Devices in Treatment of Laryngeal Diphtheria: A New Laryngeal Forceps, A New Laryngeal Probang. E. Rosenthal, Philadelphia.
83 *Analysis of Gastric Contents After Gastroenterostomy. C. R. Jones, Pittsburg.
84 The Misfortunes of Scientific Medicine. J. C. O'Day, Oil City.

73. **Exploratory Laparotomy in Gastric Diseases.**—In the oration on surgery Rodman said that the early recognition of cancer is generally impossible without exploration, and may be so even with it unless the growth is removed. He has seen but one instance of an ulcer in any other part of the stomach than the pylorus which has undergone malignant transformation. He explains its frequency at the pylorus by greater irritation and friction and the fact that the acid chyme is thrown against it in volume and force. In addition to his own case, all that he could find in the literature of an ulcer not at the pylorus which had undergone malignant degeneration was one case by Cackovic.

74 and 75. Abstracted in The Journal, Oct. 26, 1907, p. 1465.

76. Abstracted in The Journal, Nov. 16, 1907, p. 1715.

78. **Thyroid Extract in Epilepsy.**—Gordon reports ten cases in which thyroid extract was used with beneficial effect in epilepsy and migraine.

81. Abstracted in The Journal, Nov. 9, 1907, p. 1624.

83. Abstracted in The Journal, Nov. 2, 1907, p. 1549.

Northwestern Lancet, Minneapolis.

July 1.

85 *Sondern's Differential Leucocyte Resistance Line in Diagnosis and Prognosis of Acute Appendicitis. L. B. Wilson, Rochester, Minn.
86 "Charcot Joint." F. E. Leavitt, St. Paul.
87 *Mental Contagion. A. S. Hamilton, Minneapolis.
88 Indications for Craniotomy. H. W. Jones, Minneapolis.

July 15.

89 Treatment of Gastric Ulcer. J. W. Bell, Minneapolis.
90 Study of the Metabolism in a Case of Diabetes. W. D. Sheldon, Minneapolis.
91 *Surgical Necessities During Pregnancy and Labor. J. C. Litzenberg, Minneapolis.
92 *Surgical Necessities Following Labor. A. E. Benjamin, Minneapolis.

85. **Sondern's Differential Resistance Line.**—Wilson illustrates a modification of Gibson's standard chart for recording observations as to the leucocyte count and the estimate of polynuclear percentage as suggested by Sondern. He reports a series of observations, divided into two groups: A, those which come under observation on or before the third day, and, B, those which come under observation on or after the fourth day. These again are subdivided as follows: Class A into (1) cases of acute catarrhal appendicitis; (2) cases of early purulent appendicitis without walled-off abscesses, and (3) cases of chronic appendicitis without pathologic evidence of the real or imagined acute exacerbation. Class B is divided into (1) cases in which a well-marked-off abscess exists; (2) cases in which there is an imperfectly walled-off abscess, and (3) cases in which there is a very small and disappearing abscess. While drawing no sweeping conclusions, Wilson thinks the following statements justifiable: 1. Sondern's hypothesis, that the polynuclear percentage is an index of infection, the total leucocytosis an index of body reaction, and their proportional relationship an index of resistance, seems to be supported. The more important exceptions to this are in moribund cases and perhaps in children. 2. As practically applied in early appendicitis cases the disproportional polynuclear increase, i. e., a rising resistance line, indicates a more or less severe infection, which is not being properly cared for by the body. The higher and longer this line, the more serious the case. 3. A proportional polynuclear percentage or a disproportionate polynuclear decrease, if well marked, indicates mild or well-cared-for infection. 4. The value to the surgeon in early cases is but little, since in most early cases the patients are operated on anyway. It may be of some value negatively in indicating that the supposedly acute exacerbations of chronic appendicitis are not present. 5. In cases between the fourth and fourteenth days, the resistance line is of great value to the surgeon in indicating the patient's poor resistance and the necessity for immediate operation. The operative findings in these cases bear out the leucocyte determination with wonderful accuracy. 6. In cases like those in A. 3, a horizontal or falling resistance line indicates that the patient is taking care of the infection. If the infection is severe, as shown by a high though falling line, the patient may perhaps best be given medical treatment rather than submitted to operation. 7. When such a case as is indicated in B. 1 is being kept under observation, the resistance line should be determined daily, and should the line begin to rise the patient may be submitted to operation.

87. **Mental Contagion.**—Hamilton refers to the mental epidemics that have occurred in all ages, and urges the advisability of segregating the insane, the idiots and the imbecile, not only for their own sakes, but because of the unhealthy mental influence, which is otherwise constantly exercised on friends and neighbors. He reports cases to show the morbid influence of the insane or the abnormal on other minds whose power of resistance has from some cause become lessened.

91. **Operations During Pregnancy.**—Litzenberg sums up his considerations on this subject as follows: When operative conditions arise that would, if postponed, be dangerous to the health or life of a woman, the fact that she is pregnant should not deter the surgeon from operating, because, in fact, there is really little danger of interrupting pregnancy except in women who are excessively nervous. So tolerant to injury is the pregnant woman that extensive lacerated wounds of the abdomen and accidents violent enough to fracture the fetal extremities have occurred and pregnancy has gone on uninterruptedly. The condition calling for operation is usually more likely to endanger the pregnancy than the operation itself. Unless the demand for an operation be very urgent, the time which corresponds to the menstrual period must be avoided; and, as women seem prone to lose their babies at the third, fourth and eighth months, these should not be selected for operating. With these exceptions, surgery on the pregnant woman may be undertaken with little fear of unusually grave consequences.

92. **Surgical Necessities Following Labor.**—Benjamin says that labor may result in one or more of the following conditions, which he discusses seriatim: 1, Rupture of the uterus; 2, lacerated cervix; 3, lacerated perineum; 4, uterine displacement: (a) retroflexion, (b) retroversion, (c) prolapse; 5, prolapse of adnexa and uterus; 6, cystocele; 7, rectocele; 8, fistula. Among diseases that may arise, or being latent may be lighted up into activity, by labor he names: 1, Appendicitis; 2, salpingitis; 3, peritonitis; 4, septicemia; 5, ovarian cysts; 6, carcinoma; 7, tuberculous peritonitis; 8, gall-bladder disease; 9, uterine fibroids. These also he considers in detail. He draws the following conclusions: 1. It is time that the profession should recognize the importance of carefully investigating all cases of pregnant women with possible associated pelvic or abdominal disease. 2. It is certain that many diseases, such as appendicitis, gall-bladder disease, ovarian cysts and certain uterine fibroids, are better operated on during the pregnant state than after the symptoms are exaggerated by the traumatism of childbirth. 3. Women who have borne children may have had an irregular convalescence, due to the presence of pelvic disease that has been directly caused or exaggerated by labor. 4. When certain complications are manifest after childbirth their early recognition and operation often offer the safest prognosis. 5. Nearly all lacerations of the cervix, vagina and perineum are best repaired directly following the birth of the child. 6. Such repair often saves

months and years of suffering (often many women will never have these repairs done later). 7. By immediate repair other complications are frequently avoided 8. Nearly all late cases of laceration and uterine displacement, fistulæ, etc., should be corrected for the bodily and mental comfort of the patients

Albany Medical Annals, Albany, N. Y.

June

93 Glimpses of the Past H M Hicks, Amsterdam N Y
94 The "Herd" Theory as an Etiologic Factor in Ozena C F Theisen Albany
95 Clinical Types of Alcoholic Insanity N A Pashayan, Schenectady, N Y
96 The Guest; or Personal Experiences of a Patient in a Hospital for the Insane (continued) Told by Herself

Ohio State Medical Journal, Columbus.

June

97 Six Cases of Diffuse Suppurative Peritonitis Following Appendicitis with Perforation J I Barnhill, Columbus
98 Operations on Some Complicated Cases of Appendicitis and Some Cases Resembling Appendicitis H T Sutton, Zanesville, Ohio
99 What Should a Physician in General Practice Know and Do in a Case of Appendicitis? S B McGavran Cadiz
100 Importance of Early Diagnosis of Acute Infections of the Middle Ear. J M. Ingersoll, Cleveland
101 Prophylaxis and Early Treatment of Acute Otitis Media G C Jameson Oberlin
102 Treatment of Pain in the Ear without Operation. C. Lukens Toledo
103 Surgical Treatment of Earache from the Standpoint of a Specialist W. Thrasher, Cincinnati

Monthly Cyclopedia and Medical Bulletin, Philadelphia.

June

104 Therapeutics of Cardiovascular Disease F P Henry Philadelphia
105 The Essence of the Rest Cure J M Taylor, Philadelphia
106 The Bier Hyperemia Method—How to Enhance Its Curative Efficiency C E deM Sajous Philadelphia

Mississippi Medical Monthly, Vicksburg.

June

107 Presentation of Gavel W H Alkman Natchez
108 Infantile Scurvy or Scorbutus P Beekman, Natchez.
109 Neuritis M J Alexander, Tunica

Western Medical Review, Omaha.

June

110 Nutritional Disorders in Infants H M McClanahan, Omaha
111 Therapeutic Value of Rest in Bed W I Milroy Omaha
112 Chronic Ileus L Wiseman Cheyenne, Wyo

Indiana Medical Journal, Indianapolis.

June

113 Pragmatism and Medicine J Y Reed, Indianapolis
114 Principles and Practice in Treatment of Wounds J W Sluss Indianapolis
115 Diagnosis of Pus in the Pleural Cavity A C. Kimberlin, Indianapolis
116 Scleroderma A W Brayton Indianapolis
117 Syphilis as Portrayed by Shakespeare A C. Getchell, Worcester, Mass

Journal of Outdoor Life, Saranac Lake, N. Y.

June

118 New Discoveries to be Made in Tuberculosis R Koch
119 New York State Hospital for Crippled and Deformed Children J. J Nutt New York
120 Street Dust as a Factor in Spread of Disease F P McCarthy Oil City, Pa.

American Journal of Urology, New York.

June

121 Hematuria G MacGowan Los Angeles
122 Spermatocele Prof von Posner, Berlin
123 Typical Cases of Spermatorrhea F M Johnson Boston
124 Dual Malignancy in the Penis. J N Vander Veer and C W. L Hacker, Albany
125 Amputation of Penis in Case of Syphilis M L Heidingsfeld, Cincinnati

Journal of the New Mexico Medical Society, Albuquerque.

June 15

126 Vaginal Hysterectomy S D. Swope, Deming, N M
127 Ophthalmia Neonatorum W. G Shadrach, Albuquerque
128 Report of Special Health Officer B Ruppe, Tucumcari, N. M
129 Vaginal Hysterectomy in a Pregnant Woman—Recovery H Crutcher, Roswell, N M
130 Sleeplessness J. W. Colbert, Albuquerque
131 Surgery of the Gall Bladder. D H Cairns, Albuquerque

Atlanta Journal-Record of Medicine.

June

132 Medical Clark, Macon, Ga
133 One Hur e Joint Operations M. Hoke and C
134 Tumors of the Bladder L. Fowler, Atlanta
135 "American Hookworm"—Uncinariasis A G Fort, Lumpkin, Ga
136 Prophylaxis and Treatment of Typhoid Fever J. B Woodville, Fayette, W Va

New York State Journal of Medicine.

June

137 *Oxygen in Medicine and Surgery. W S Bainbridge New York
138 *Vascular Crises H L Elsner, Syracuse, N Y.
139 *Causes and Treatment of High Arterial Tension L F Bishop New York
140 Modern Conceptions Regarding Chemical Regulation of Function G Lusk, New York.
141 *Technic of an Efficient Operative Procedure for the Removal and Cure of Superficial Malignant Growths S Sherwell, Brooklyn, N Y
142 Acute Diverticulitis C C Zacharie, White Plains, N Y
143 Extracting Test Meals A Bassler, New York
144 *Intracranial Complications of Middle Ear Suppuration S J. Kopetsky, New York

137, 138, 139, 141 and 144. Abstracted in The Journal, Feb 29, 1908, pp 721 and 722.

FOREIGN.

The Lancet, London.

July 18

1 *Etiology of Pulmonary Tuberculosis Sir W Whitla
2 *Inborn Errors of Metabolism A E Garrod
3 *Opsonic Index in Pulmonary Tuberculosis D L. Smith, J A D Radcliffe, D Elder and A Crossley
4 *Blood Pressure in Neurasthenic States and Effects of Treatment E D Macnamara
5 Osteomalacia W O Meek
6 *Diphtheritic Paralysis Treated by the Serum of Roux G S Middleton

1 Published in the British Medical Journal, July 11, 1908, and commented on editorially in The Journal, August 1 page 410 Abstracted in The Journal, August 8, p 535.

2 **Inborn Errors of Metabolism.**—In the third Croonian lecture Garrod takes up in detail the subject of cystinuria He goes deeply into its chemistry. He next considers the derangement of sulphur metabolism in cystinuria, in virtue of which the subjects of the anomaly excrete some part of their cystin as such in the urine, often to their serious disadvantage. He is convinced that cystinuria is less rare than alkaptonuria. The liability to the formation of calculi composed of cystin and to other urinary disorders, such as cystitis, gives to cystinuria a practical as well as a theoretical importance. He describes the cystinuric urine and the method of obtaining cystin crystals. The cessation of deposits must not be taken as evidence that a patient has ceased to excrete cystin, for the addition of acetic acid may cause their deposition. In the feces of cystinurics no cystin can be found. The error of metabolism underlying cystinuria is more complex and less uniform than that underlying alkaptonuria. The cases hitherto investigated admit of classification on the following lines: 1. In some no diamines and no primary protein fractions other than cystin have been found in the urine. 2. In some the urine has contained cadaverin or putrescin or both, in addition to cystin, but the excretion of diamines is apt to occur in an intermittent manner. 3. In a very few cases leucin or tyrosin, or both, have been excreted, with or without diamines. 4. In a single case, that of Loewy and Neuberg, cystin was present in the urine, but no diamine, leucin or tyrosin. When diamino acids were given by the mouth the patient excreted the corresponding diamines, and when tyrosin and aspartic acid were given these were excreted unchanged. In other cases in which similar feeding experiments have been tried no such results have followed the swallowing of diamino- or monamino acids, and this patient was also exceptional in his method of dealing with cystin introduced by the mouth.

Garrod discusses the various methods for estimating cystin in urine. He gives tables showing (1) the uniformity of many of the figures in the daily excretion of cystin in 19 cases of cystinuria; (2) a constant variation of the C:N ratio in the output in cystinuria. Cystin administered to cystinurics is burned by them to sulphate, as is the case when given to a normal man. This lends support to the view that the cystin excreted unchanged by patients has its origin in the breaking down of the tissue proteins and not of those of the food. Only a certain path of sulphur metabolism is interfered with in cystinuria. Cystin excretion is only one of the manifestations of the metabolic anomaly known as cystinuria Other protein fractions than cystin may also be implicated in the error, with the result that cadaverin and putrescin, leucin and tyrosin may be excreted side by side with cystin.

3. **Opsonic Index in Pulmonary Tuberculosis.**—Smith, Radcliffe, Elder and Crossley report the results of researches, undertaken at the Crossley sanatorium, which afforded unusual opportunities of observing pulmonary tuberculosis in various degrees. The technic adopted was that of Wright and Douglas. Two or three normal persons were used as controls. From their charts the authors learn that in some cases there is a very appreciable variation in the opsonic power from hour to hour, although the patients were resting, and they conclude that one can not determine on the result of one estimation of the index whether an injection of tuberculin should be given or not They classify different types of patients according to their suitability for inoculation. (a) Those showing extreme and rapid oscillations in opsonic power—In cases of this type it was thought that, as even at rest the autoinoculations were so marked, the results of tuberculin treatment would probably be unfavorable. (b) Those with persistently high level indices—Injections were not given here, as it was considered that it would not be possible to improve the patient's opsonic power and the risk of inducing a negative phase would have been incurred.. (c) Those with low indices—Injections were instituted in these cases and apparently with excellent results. Other investigations, carried out by the authors for the purpose of finding out whether there is any regular parallelism between the agglutinins and the opsonins in cases of phthisis, show that the two follow a similar course, and that the opsonic estimations are more delicate and record much slighter variations.

4 **Blood Pressure in Neurasthenia.**—Macnamara's observations lead him to the following conclusions: 1. In many cases of neurasthenia there is an alteration of the level of the blood pressure from the normal, the level being sometimes higher and sometimes lower than normal. 2. Patients who show such alterations and who undergo certain sorts of treatment manifest, in some cases, at the end of a course of treatment a level of pressure different from that which existed before treatment began. If the pressure at the commencement is abnormally high it will probably descend, while if it is abnormally low it will probably ascend. 3. The number of patients whose blood pressure is different at the end of their course of treatment from that which it was before treatment began is greater among those without a family history of nervous instability than among those with such a history. 4. In a very large majority of cases the application of high frequency currents produces a lowering of blood pressure, while the static bath (+ charge) and massage produce a raising of pressure. The discharging of a patient charged with static electricity results as often in a rise as in a fall of blood pressure The application of the faradic current tends rather to lower than to raise the blood pressure, and the galvanic current can not be said to effect much change in either direction. 5. It is difficult to institute treatment with any confidence that there will be at the end of the course such an alteration as might perhaps be expected from a knowledge of the alteration that is likely to follow each application of the therapeutic agent employed, though we may look for a change of level, when the level was at the commencement abnormal, to one that is nearer the normal. There is no evidence that the differences of variation of level before and after treatment, which may sometimes be noted, can be correlated with improvement in health.

6. **Diphtheritic Paralysis.**—Middleton reports a severe case of diphtheritic paralysis of all four extremities in a man, 31 years old, which was progressing very unfavorably, when all other treatment was stopped and Roux's antidiphtheritic serum, obtained from Paris for the purpose, was injected. Beginning with 20 c.c. on January 16, between that date and the 25th, 80 c.c. more were injected. Increase in power was noted on January 17. By January 21 the patient could pick up small objects and turn in bed without assistance, on January 29 he could feed himself and stand alone, and he was discharged, well, by March 6. While this disease tends to spontaneous recovery, the coincidence of improvement with the first injection and its rapid and unchecked progress to cure cause Middleton to hope that the promise held out by a few previously reported cases will be fulfilled. Roux's serum was used, because that was used in the previously reported cases, but in his next case Middleton will try the antidiphtheritic serum in common use.

British Medical Journal, London.

July 18

7 Bier's Induced Hyperemia H F Waterhouse
8 Nasal Obstruction W G Spencer
9 Treatment of Otitic Cerebellar Abscess D R Paterson
10 Complications of Chronic Otorrhea H H B Cunningham.
11 *Iritis, with Special Reference to Gonorrheal Iritis W M. Beaumont
12. *Little Known Type of Amblyopia in Children S Stephenson
13 Medical Inspection of Schools W L Edwards
14 *Action of Arsenic on Red Blood Corpuscles, and a Theory of Blood Defect in Pernicious Anemia J A Gunn

11. **Gonorrheal Iritis.**—Beaumont describes a syndrome—gonorrhea, arthritis, iritis His own experience leads him to conclude that gonorrheal iritis is much more common than is generally admitted. Rheumatoid arthritis is less common. Gouty iritis he is altogether skeptical about.

12. **Amblyopia in Children.**—In cases of "incomplete postpapillic atrophy of the optic disc," which in Stephenson's observation are invariably bilateral, inquiry into the patient's personal history often elicits the fact that, when an infant, there had been a "cerebral" or "meningitic" illness, marked by such symptoms as "fits," convulsions, headache, vomiting, constipation, retraction of the head, temporary paralysis, squint, unconsciousness, and so forth On recovery from the attack, sight was found to be partially or totally lost, but has since been more or less regained. The conclusion is almost inevitable that an infantile meningitis or encephalitis was accompanied by optic papillitis, and that both the general and local condition had to some extent been recovered from. The incomplete optic atrophy seen later by the ophthalmic surgeon is on this view to be regarded as a sequel to a meningitic papillitis. Stephenson reports cases which show that an attack of meningitis (or encephalitis) may entail, as permanent evidence of its former existence, (1) incomplete optic atrophy, (2) nystagmus, and (3) paresis of one or more of the extrinsic muscles of the eyeball. These symptoms, it will also be seen, may occur as isolated or grouped phenomena. In the last case quoted by the author paresis of the extrinsic muscles was the only evidence of a former meningitis

14. **Red Blood Corpuscles.**—Gunn has performed a series of experiments to explain the hematinic value of arsenic, viz, its action on the formed red blood corpuscles, with the result that arsenic has been found to exert on them *in vitro* a pronounced protective influence against the hemolytic action of one of the most commonly used hemolytic agents, distilled water. He describes three experiments and says that, from the fact that the addition of distilled water produced considerably less hemolysis in those corpuscles which had been subjected to arsenic than in those which had gone through the same processes minus arsenic, three conclusions may be drawn: 1. That arsenous acid is fixed to the red blood corpuscles. 2. That this process takes place very rapidly 3. That it protects these corpuscles against the hemolytic action of distilled water. He says that the individual high hemoglobin content of red cells in pernicious anemia, coupled with the observation that iron is present in the liver and other organs and that it is useless as a remedy, seems to indicate that the defect does not lie in the hemoglobin. He suggests that the stroma of the red blood corpuscles consists largely of lecithin and cholesterin. The condition known as pernicious anemia may be due to a deficiency in the body of lecithin or cholesterin and the administration of these substances may be of some use as a remedy. Certain facts go to show that

there may be some defect in the stroma of the red cells in this disease. For example, they do not run into rouleaux in normal fashion. On such a hypothesis of the blood defect in pernicious anemia, the results of its somewhat empirical treatment may possibly be explained.

Clinical Journal, London.

July 15

15 Carcinoma of the Ascending Colon L A Bidwell
16 Modern Methods of Infant Feeding E. Langmead

Medical Press and Circular, London.

July 15

17 Clinical Forms of Tuberculous Hemoptysis. F Bezancon and S I de Jong
18 *Acute Disseminated Sclerosis W Murrell.
19 Inheritance of Insanity and Tuberculosis. W R MacDermott
20 The Austrian Tyrol as a Health Resort D Walsh

18 **Disseminated Sclerosis.**—Murrell reports a remarkable case of a girl, aged 19, who, after a week's sickness, with vomiting and pains in the abdomen and inability to walk, came to hospital on January 8 She was bright and cheerful looking and did not appear to be ill He describes the symptoms, which led to a diagnosis of hysteria She remained in the same condition until January 30, when the appearance of incontinence of urine and feces aroused the suspicion that the cause was some commencing organic lesion By February 4 the case was regarded as an early one of disseminated sclerosis, on the basis of the following summary of symptoms: 1 Patient in bed, fairly cheerful, but disinclined to speak. 2 Inability to stand, although both legs are moved freely in bed 3 Reflexes exaggerated, no tremor, and apparently no anesthesia 4 Dilatation of left pupil, with left ptosis and flattening of the left side of face 5 Incontinence of urine and feces 6 Occasional purposeless vomiting, apparently no headache Alternative possibilities were entertained, in succession, of a cerebral tumor in the silent area or tuberculous meningitis The patient died February 10 and an autopsy showed nothing to account for death A more minute examination of the hardened brain, however, showed numerous areas of degeneration throughout, their shape, size and distribution being very irregular There was no shrinking or bulging of the cord at the sites of the degenerative areas The diagnosis of disseminated sclerosis was thus finally established The whole period of illness, reckoning from the onset of the first symptom to death, was forty days This is probably the most acute case on record

Journal of Tropical Medicine and Hygiene, London.

July 1

21 *Tertiary Yaws R Howard
22 *Situation of Splenic Rupture in Enlarged Spleens J Cantlie
23 *Antityphoid Inoculation R H Fox

21 **Tertiary Yaws.**—Howard, writing from British Central Africa, describes the symptoms of tertiary yaws, which he holds to be a true disease and not a form of syphilis. Syphilis is very rare in the country he writes from, while tertiary yaws is very common In two instances, moreover, of boys of about 13, who were certainly free from syphilis, and who had undoubtedly true yaws, this tertiary form appeared Howard describes the skin lesions, bone and joint disease, and destructive ulceration of the nose, palate and pharynx.

22 **Situation of Splenic Rupture.**—Cantlie gives drawings to demonstrate that rupture of the inner surface of the spleen may be occasioned by a blow on the surface of the body, without any evidence of bruising on the outside surface of the spleen—an important medicolegal point, since so many ruptures of the spleen follow on a blow or kick over its region.

23 **Typhoid Preventive Inoculation.**—Fox discusses this subject, including the theory and method of the inoculation, very thoroughly, and urges missionaries and others working in tropical countries to have themselves inoculated. He considers that its utility is proved, and recommends that the vaccine be obtained from laboratories under the control of the discoverer. The duration of the immunity is probably not less than two years

The Journal of Hygiene, London.

Mc.

24 *Insects in the Epidemiology of Plague D T Verjbitski
25 Are Domestic Animals of India Affected by Plague? W. B Bannerman and R J. Kápadiá
26 *Septicemia in Human Plague: Experiments on the Infectivity of the Excreta.
27 Bionomics of Fleas
28 *How the Flea Clears Itself of Plague Bacilli
29 The Seasonal Prevalence of Plague in India
30 Differential Diagnosis of Plague Bacillus

24. **Insects in the Epidemiology of Plague.**—Verjbitski presented this paper as a thesis for the degree of M.D. at St. Petersburg in 1904, but, as it was in Russian and was not published in any of the well-known journals, it escaped notice. The Indian Plague Commission, however, found that the author's experiments were so well conceived and executed and his results so important in regard to the spread of plague, and covering so much of the ground subsequently traversed by the commission—though the particular species of fleas worked with in the two instances were not identical—that they present it as one of the reports of the commission The rat flea in St. Petersburg is not the *Pulex cheopis*, but the *Typhlopsylla*, which is found not to bite man. Among his results he notes:

1 All fleas and bugs which have sucked the blood of animals dying from plague contain plague microbes. 2 Fleas and bugs which have sucked the blood of animals which are suffering from plague, only contain plague microbes when the bites have been inflicted from twelve to twenty six hours before the death of the animals, that is, during that period of their illness when their blood contains plague bacilli. 3 The vitality and virulence of the plague microbes are preserved in these insects 4 Plague bacilli may be found in fleas from four to six days after they have sucked the blood of an animal dying with plague In bugs not previously starved or starved only for a short time (one to seven days), the plague microbes disappear on the third day: in those that have been starved for four to four and a half months, after eight or nine days 5 The number of plague microbes in the infected fleas and bugs increase during the first few days 6 The feces of infected fleas and bugs contain virulent plague microbes as long as they persist in the alimentary canal of these insects 7 Animals could not be infected by the bites of fleas and bugs which had been infected by animals whose own infection had been occasioned by a culture of small virulence, notwithstanding the fact that the insects may be found to contain abundant plague microbes 8 Fleas and bugs which have been fed on animals which have been infected by cultures of high virulence, convey infection by means of bites and the more certainly so the more virulent the culture with which the first animal was inoculated 9 The local inflammatory reaction in animals which have died from plague occasioned by the bites of infected insects is either very slight or absent In the latter case it is only by the situation of the primary bubo that one can approximately identify the area through which the plague infection entered the organism 10 Infected fleas communicate the disease to healthy animals for three days after infection Infected bugs have the power of doing so for five days 11 It was not found possible for more than two animals to be infected by the bites of the same bugs 12 The crushing of infected bugs *in situ* during the process of biting, occasioned in the majority of cases the infection of the healthy animal with plague 13 The injury to the skin occasioned by the bite of bugs or fleas offers a channel through which plague microbes can easily enter the body and occasion death from plague 14 Crushed infected bugs and fleas and their feces, like other plague material, can infect through the small punctures of the skin caused by the bites of bugs and fleas, but only for a short time after the infliction of these bites 15 In the case of linen and other fabrics soiled by crushing infected fleas and bugs on them, or by the feces of these insects, the plague microbes can, under favorable conditions, remain alive and virulent during more than five months 16 Chemical disinfectants do not in the ordinary course of application kill plague microbes in infected fleas and bugs 17. The rat flea, *Typhlopsylla musculi*, does not bite human beings 18 Human fleas do bite rats 19 Fleas found on dogs and cats bite both human beings and rats 20 Human fleas and fleas found on cats and dogs can live on rats as casual parasites and therefore can under certain conditions play a part in the transmission of plague from rats to human beings, and vice versa

26 **Infectivity of Plague Excreta.**—The commission says that experiments devised with the object of testing the infectivity of the excreta from the point of view of the spread of the human epidemic support the conclusion that the excreta of plague patients are ineffective in this regard These experiments show (a) that the feces are rarely infective, even when a septicemia is present; (b) that the urine—in some cases containing virulent plague bacilli—from patients acutely ill of the disease failed to infect guinea pigs when rubbed into a scarified area of skin; (c) that guinea pigs exposed to intimate and prolonged contact with linen soiled with the excreta of moribund patients remained free from infection.

28. **The Clearing of Fleas from Plague.**—The commission reports: Fleas that have fed on septicemic blood are capable of conveying infection to fresh animals on which they feed. This capability is associated with the presence of plague bacilli in the stomach, intestine and feces. If such infected fleas are kept in captivity, it is found that after a time they are no longer capable of conveying infection; at the same time on dissection no bacilli are found in them. The commission shows that: 1, A clearing process exists; 2, the clearing process is more active at 90 F. than at lower temperatures; 3, it is probably of a phagocytic nature.

Bristol Medico-Chirurgical Journal.

June.

31 *Is Opsonic Treatment Useful in Phthisis? J. M. H. Munro.
32 *Calmette's Ocular Reaction in Tuberculosis. J. M. Fortescue-Brickdale.
33 Treatment of Hemoptysis in Pulmonary Tuberculosis. N Neild.
34 Early Diagnosis of Pulmonary Tuberculosis. C. Muthu
35 Lachrymal Obstruction: Its Results, Dangers and Treatment. C. Goulden.

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Annales de Médecine et Chirurgie Infantiles, Paris.

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Bristol Medico-Chirurgical Journal.

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1. All fleas and bugs which have sucked the blood of animals dying from plague contain plague microbes. 2. Fleas and bugs which have sucked the blood of animals which are suffering from plague, only contain plague microbes when the bites have been inflicted from twelve to twenty-six hours before the death of the animals, that is, during that period of their illness when their blood contains plague bacilli. 3. The vitality and virulence of the plague microbes are preserved in these insects. 4. Plague bacilli may be found in fleas from four to six days after they have sucked the blood of an animal dying with plague. In bugs, not previously starved or starved only for a short time (one to seven days), the plague microbes disappear on the third day: in those that have been starved for four to four and a half months, after eight or nine days. 5. The number of plague microbes in the infected fleas and bugs increase during the first few days. 6 The feces of infected fleas and bugs contain virulent plague microbes as long as they persist in the alimentary canal of these insects. 7. Animals could not be infected by the bites of fleas and bugs which had been infected by animals whose own infection had been occasioned by a culture of small virulence, notwithstanding the fact that the insects may be found to contain abundant plague microbes. 8. Fleas and bugs which have been fed on animals which have been infected by cultures of high virulence, convey infection by means of bites, and the more certainly so the more virulent the culture with which the first animal was inoculated. 9. The local inflammatory reaction in animals which have died from plague occasioned by the bites of infected insects is either very slight or absent. In the latter case it is only by the situation of the primary bubo that one can approximately identify the area through which the plague infection entered the organism. 10. Infected fleas communicate the disease to healthy animals for three days after infection. Infected bugs have the power of doing so for five days. 11. It was not found possible for more than two animals to be infected by the bites of the same bugs. 12 The crushing of infected bugs *in situ* during the process of biting, occasioned in the majority of cases the infection of the healthy animal with plague. 13. The injury to the skin occasioned by the bite of bugs or fleas offers a channel through which plague microbes can easily enter the body and occasion death from plague. 14 Crushed infected bugs and fleas and their feces, like other plague material, can infect through the small punctures of the skin caused by the bites of bugs and fleas, but only for a short time after the infliction of these bites. 15. In the case of linen and other fabrics soiled by crushing infected fleas and bugs on them, or by the feces of these insects, the plague microbes can, under favorable conditions, remain alive and virulent during more than five months. 16. Chemical disinfectants do not in the ordinary course of application kill plague microbes in infected fleas and bugs. 17. The rat flea, *Typhlopsylla musculi*, does not bite human beings. 18. Human fleas do bite rats. 19. Fleas found on dogs and cats bite both human beings and rats. 20. Human fleas and fleas found on cats and dogs can live on rats as casual parasites, and therefore can under certain conditions play a part in the transmission of plague from rats to human beings, and vice versa.

26. **Infectivity of Plague Excreta.**—The commission says that experiments devised with the object of testing the infectivity of the excreta from the point of view of the spread of the human epidemic support the conclusion that the excreta of plague patients are ineffective in this regard. These experiments show (a) that the feces are rarely infective, even when a septicemia is present; (b) that the urine—in some cases containing virulent plague bacilli—from patients acutely ill of the disease failed to infect guinea-pigs when rubbed into a scarified area of skin; (c) that guinea-pigs exposed to intimate and prolonged contact with linen soiled with the excreta of moribund patients remained free from infection.

28. **The Clearing of Fleas from Plague.**—The commission reports: Fleas that have fed on septicemic blood are capable of conveying infection to fresh animals on which they feed. This capability is associated with the presence of plague bacilli in the stomach, intestine and feces. If such infected fleas are kept in captivity, it is found that after a time they are no longer capable of conveying infection; at the same time on dissection no bacilli are found in them. The commission shows that: 1, A clearing process exists; 2, the clearing process is more active at 90 F. than at lower temperatures; 3, it is probably of a phagocytic nature.

Bristol Medico-Chirurgical Journal.

June.

31 *Is Opsonic Treatment Useful in Phthisis? J. M. H. Munro.
32 *Calmette's Ocular Reaction in Tuberculosis. J. M. Fortescue-Brickdale.
33 Treatment of Hemoptysis in Pulmonary Tuberculosis. N. Neild.
34 Early Diagnosis of Pulmonary Tuberculosis. C. Muthu
35 Lachrymal Obstruction: Its Results, Dangers and Treatment. C. Goulden.

31. **Is Opsonic Treatment Useful in Phthisis?**—Munro says that this question, often asked by interested patients and their relatives, is still met by the majority of family doctors with an answer in the negative. While commending the cautious attitude, he hopes to incline them to an opposite verdict. "A strict *experimentum crucis* is hardly realizable in medicine, for when all material conditions have been arranged so that the only one to be varied at will is the therapeutic agent under test, one has still to reckon with uncontrollable changes in the patient, with psychic influences and the possibility of faith cures." He reports a series of cases, however, which lead him to the following comment: If tuberculin can show distinct evidence of specific action in serious, acute and long-standing cases of phthisis, like the few here cited, can not much more be expected of it in very early and slight cases? When the diagnosis is clearly established, it seems that it should be the very first means used after the patient has been placed under suitable conditions; and, as the essentials of rest, fresh air and good feeding can generally be obtained outside a sanatorium, he believes that tuberculin without a sanatorium can do more than a sanatorium without tuberculin. Finally, there are the very numerous cases of children and young people beginning to ail who ought to be in perfect health. The family doctor suspects a tuberculous tendency or "delicacy of chest," but no unimpeachable symptoms are discoverable. If, however, there is a group of suspicious little facts, explicable by incipient tuberculosis, though not diagnostic of it, and if a series of three or four opsonic indices (two of which may advantageously be taken before and after exercise, respectively) shows the fluctuations so often met with in actual infections, it will probably be found that a few inoculations will at once establish the diagnosis and cure the patient. Several cures of this kind have come under his own observation during the two years he has acted on the obvious indication.

32. **Ocular Tuberculin Reaction.**—Fortescue-Brickdale discusses the literature of the subject and tabulates it, adding the cases observed by himself and his colleagues at the Children's Hospital, the total number of individual cases reaching 4,448. The cases are arranged in three columns: those clinically tuberculous, those clinically non-tuberculous, and those clinically doubtful. Out of 1,623 cases in the first class, 1,419, or 87.4 per cent., gave a positive and 204, or 12.6 per cent., a negative result. In the second class there are 1,931 cases, of which 214, or 11.1 per cent., were positive and 1,717, or 88.9 per cent., negative. In the third class, out of 710 cases 275, or 38.7 per cent., were positive and 435, or 61.3 per cent., were negative. His conclusion is that "for practical clinicians the moral of Calmette's reaction is that there is no short cut to diagnosis, unless it be that made by the surgeon's knife when he opens the abdomen, for instance, and finds acute hemorrhagic pancreatitis."

Annales de Médecine et Chirurgie Infantiles, Paris.

July 1, XII, No. 13, pp. 433-468.

36 *Case of Malingering. E. Périer.
37 Arterial Pressure in Normal Children. (Tension artérielle normale chez l'enfant.) E. Gaujoux.
38 Erysipelas in the Newly Born. (Erysipèle chez le nouveau-né.) A. Herrgott.
39 *Standards for Growth in Length and Weight of the Newly Born. (Accroissement statural et pondéral chez le nouveau-né.) G. Variot.

36. **Case of Malingering.**—Périer uses Dieulafoy's new term "pathomimie"—from the Greek words for disease and for imitation—in referring to a case of malingering in which a girl of 14, of a wealthy family, baffled medical skill for a long time by searing herself at various points with a curling iron. The shape of one of the lesions finally gave the clue. Charcot was one of the authorities consulted.

39. **Standards for Growth in Length and Weight After Birth.**—Variot thinks that nothing can compare with the scales for determining the proper development of an infant, but records of its growth in length are also important, as he shows by a number of examples. The growth in length proceeds entirely *independent of the growth in weight, and fluctuations from* the normal standard of each may afford valuable information.

Archives Générales de Chirurgie, Paris.

June 25, II, No. 6, pp. 551-664.

40 Surgical Intervention in Irreducible and Old Dislocation of the Tarso-Metatarsal Joint. (Luxations irreductibles et anciennes de l'articulation de Lisfranc.) C. Lenormant.
41 *Pulmonary Embolism After Radical Treatment of Inguinal Hernia. Mauclaire.
42 Simultaneous Dislocation of Both Shoulder Joints. J. Anglada.

41. **Embolism of the Lungs After Radical Operation for Inguinal Hernia.**—Mauclaire reports a case of bilateral phlebitis of the spermatic vein and slight right pulmonary embolism after an operation for inguinal hernia on a man of 42. He summarizes 25 cases in the literature, with 25 others briefly mentioned, and 7 cases of femoral phlebitis. The mortality in the 25 cases of which the details are known was nearly 50 per cent. The embolism is usually tardy, of sudden onset and is generally accompanied by hemoptysis. Prophylaxis consists in avoidance of injury to the vessels in the epigastrium and of traction on the femoral vein and manipulation of the vessels in the spermatic cord. Injections of serum and copious drinking of water have been recommended to prevent this postoperative embolism, on the assumption that the patient is dehydrated. If phlebitis develops in the spermatic vessels the region must be immobilized, and he suggests that embolism might be prevented by applying a ligature high on the spermatic vein. He has had considerable experience with this intra-abdominal ligation of the spermatic vessels, and he no longer hesitates in very urgent cases to ligate the femoral or iliac vein in prevention of embolism. In regard to treatment of femoral thrombosis and pulmonary embolism, he merely calls attention to Trendelenburg's recent attempts to remove the obstructing clot after resection of the third rib and arteriotomy of the pulmonary artery. See abstract in THE JOURNAL, August 8, page 539.

Revue de Chirurgie, Paris.

July 10, XVIII, No. 7, pp. 1-211.

43 Mixed Tumors of Cheek and Lips. (Tumeurs mixtes de la joue et des lèvres.) C. Lenormant, H. R. Duval and E. Cottard.
44 *Pathogeny and Treatment of Intestinal Invagination. X. Delore and R. Leriche.
45 Hammer Toe. (Orteil en marteau.) Couteaud.
46 *Cold Retromammary Abscess. (Abscès froids thoraciques rétro-mammaires.) P. Hardouin and Marquis. Commenced in No. 6.
47 *Colectomy for Cancer of Large Intestine. P. Cavaillon and E. Perrin. Commenced in No. 6.

44. **Intestinal Invagination.**—Delore and Leriche epitomize seven cases of invagination from their experience, either essential invagination or that due to obstruction from a Meckel's diverticulum turned inside out and projecting into the lumen of the intestine, or to obstruction from a benign or malignant tumor in the small or large intestine. Reduction of the invagination by a laparotomy seldom succeeds, and resection of the entire invaginated segment has a very high mortality. The most practicable method of treatment is resection of the invaginated section after incision of the portion forming the outer cylinder sheath, followed by circular enterorrhaphy and

suture of the sheath. They give an illustrated description of this technic as they have successfully applied it in the clinic in several cases. If a cancer is responsible for the invagination, they advise making an artificial anus in the cecum with enterectomy later as indicated, closing the new anus still later This technic gave good results in one case of cancer of the sigmoid flexure with invagination. The operation was done in three stages

46. **Cold Retromammary Abscesses.**—Hardouin and Marquis analyze 41 cases of cold abscesses in the chest, including some from their own practice, and discuss the treatment which can be only by active surgery. Puncture and modifying injections should not be considered, as the primary lesion is retrocostal or pleural and practically inaccessible. Active measures have sometimes saved patients; the question whether to operate or not is merely the question of the patient's capacity for enduring the operation

47 **Colectomy.**—Cavaillon and Perrin denounce palliative measures in case of cancer of the large intestine, saying that colectomy should be done unless the general condition or metastasis contraindicate any such measure. The mortality of colectomy for cancer in uncomplicated cases is only 18 per cent Ileocolostomy can be done at one operation, but cancer on the left side, requiring colo colo anastomosis, is best treated by operating in three stages This has reduced the mortality from 40 or 60 per cent to 18 or 20 per cent, and the intervention is scarcely more serious than a palliative operation It gives good results and is a radical method of treating cancer of the colon They present an illustrated description of the three stages of the operation with details of a number of cases which emphasize the advantages of the technic advocated

Archiv fur Gynaekologie, Berlin.

LXXXV No 3 pp 481-749 Last indexed July 4 p 82

48 *Operative Treatment of Puerperal Peritonitis and Thrombophlebitis G Leopold
49 Melanoma of External Genitals P Meyer
50 Wedge Resection of Body of Uterus on Account of Chronic Metritis (Keilresection des Corpus Uteri) A Dührssen
51 Two Cases of Congenital Sacral Tumor E Keller
52 Atypical Pavement Epithelium in the Uterine Cervix (Atypisches Plattenepithel an der Portio und an der Innenfläche der Cervix uteri) W Schauenstein
53 *Importance of Suprarenal Preparations in Obstetrics (Bedeutung des Suprarenins für die Geburtshilfe) M Neu
54 Uterine Adenomyoma O Ernst

48 **Operative Treatment of Puerperal Peritonitis and Thrombophlebitis.**—Leopold has now had an experience of 18 cases in which he applied operative treatment, with recovery of 13 of the women (mortality, 27 per cent.); external causes were responsible for the fatalities in nearly every instance He reviews this material and tabulates it under various headings, emphasizing the importance of gonorrheal infection shortly before or during the pregnancy as fraught with greater danger for the confinement than is generally supposed In such women high fever may develop with signs of beginning peritonitis as early as the third day after delivery or not until the sixth day The tardy fever is especially characteristic of gonorrheal infection, and may soon lead to death from acute peritonitis or thrombophlebitis Especially dangerous are the prolonged hemorrhages after abortion, particularly when associated with fever, after expulsion of the ovum acute peritonitis or thrombophlebitis may develop. The gravest signs of this are the high, small pulse, hiccough, vomiting and chills. Of subordinate importance are abdominal pain, meteorism and, with thrombophlebitis, pain at the obturator foramen and edema of the feet and legs. Acute puerperal peritonitis indicates, not later than the third day, opening into the abdominal cavity to evacuate the pus In every case Douglas' cul-de-sac should be opened, irrigated and drained It is also useful to drain the abdominal cavity in the flanks. If the peritoneum is not involved, puerperal purulent thrombophlebitis should be treated by ligation and excision of the thrombosed, pus-filled vein. The best method here is the transperitoneal. The proper moment for it has arrived when chills indicate that the thrombi are crumbling and are being swept along In view of the fact that after a benign course of thrombosis of the femoral vein or the external iliacs on one or both sides, pyemic fever may develop later, he advocates early ligation of the iliac or the ovarian veins or even of all four. It should be recognized that the danger from the thrombophlebitis is far more threatening than that from the operation. Delay, however, reduces the resisting powers beyond redemption.

53. **Importance of Suprarenal Preparations in Obstetrics.**—Neu relates extensive experimental and clinical research on the influence of suprarenal preparations on the uterus His findings confirmed the results of Kurdinowski's experiments with the isolated uterus kept alive with Locke's fluid and injected with a suprarenal preparation. The weakest concentration—1 or 5 to 20,000 000 parts—affects the uterus more energetically than ergot or other drugs regarded as specific uterine tonics. It is a powerful stimulant for the human uterus in all stages of its development and under all conditions. The uterus responds to injection of the suprarenal preparation into its muscle tissue with vigorous contraction and constriction of its vessels, this effect persisting for several minutes The action of the preparation on the human uterus is thus dual: a purely muscular and a vasoconstrictor action, although either may predominate. The vascular phenomenon is generally most pronounced, but the muscular reaction persists longer. He found it possible to perform Cesarean section on animals after such an injection without loss of blood. Experiments with uteri just removed and clinical experiences confirmed the results on animals, showing that we have in the suprarenal preparations an extremely valuable means to combat atony and hemorrhage. The dose required for local application is too small to induce a general reaction of any consequence. The injection is best made, he thinks, through the abdominal wall into the muscular substance of the body of the uterus. Injection into the cervix or intrauterine instillation yields inconstant results. He has never observed any by effects with this intramuscular injection of 0 0001 to 0 0003 gm of the suprarenal preparations. Their principal field is to combat acute hemorrhage after expulsion and atony from inefficient labor. The old uterine tonics generally fail here on account of the delay in their action, while the suprarenal preparations act instantaneously. With this "percutaneous utero muscular technic" the injection is made at a point on the median line about two fingerbreadths below the umbilicus, pushing the needle through the abdominal wall into the uterine muscle, with care not to push it too far. In cases of extreme relaxation of the uterine supports the uterus may have sunk down and back far enough to allow loops of intestine to fall between the abdominal wall and the body of the uterus. But this is very exceptional. As a rule, the uterus is in anteflexion and rests against the *abdominal* wall, while the empty bladder is down and out of the way. He warns repeatedly that the suprarenal preparations should never be injected into a vein nor allowed to get directly into a vein in any way.

Berliner klinische Wochenschrift.

July 6, XLV, No 27, pp 1257 1300

55 Case of Congenital Elephantiasis C. T. Noeggerath
56 *Convergent Reaction in Reflex Immobility of Pupils (Convergenzreaktion bei reflektorischer Pupillenstarre) H. Lachmund
57 *Case of Adams Stokes' Disease with Induration in Bundle of His J Karcher and G Schaffner.
58 Saponaceous Compounds as Complements L v. Liebermann and B v. Fenyvessy
59 Intranasal Opening into Maxillary Sinus (Intranasale Eröffnung der Kieferhöhle) Sturmann
60 The Great Omentum. (Das grosse Netz) B Przewalski
61 Contrast Staining of Bacteria and Leucocytes in Research on Phagocytosis (Bakteriotropismus und Opsonisation) A Pappenheim
62 Appendicitis in Pregnancy and the Puerperium E. Runge

July 13, No 28, pp 1301-1344

63 *Brain Surgery. (Zur Gehirnchirurgie) H Oppenheim
64 Hemolysin in Human Pancreatic Juice (Im menschlichen Pankreassaft enthaltener Hämolysin) J Wohlgemuth
65 Nodose Periarteritis (Meso Periarteritis) C Hart
66 *Infusion of Salt and Sugar Solutions in Infants (Kochsalz und Zuckerinfusionen beim Säugling) W. Weiland
67 Complement binding Tuberculosis Antibodies and Their Connection with the Tuberculin Reaction S Cohn
68 Transillumination of Maxillary and Frontal Sinuses (Methodik der Durchleuchtung von Oberkiefer und Stirnhöhlen) K Vohsen.

69 *Acute Peritonitis. (Beurteilung und Behandlung der acuten Peritonitis.) Federmann.
70 *Latest Epidemics of Diphtheria, and Serum Treatment A. Baginsky. Commenced in No. 27.

56. **Convergent Reaction with Reflex Immobility of Pupil.**—A housemaid developed a functional psychosis at 26; when examined by Lachmund two years later he noticed that the right pupil reflex was abolished. Both pupils *contracted* nearly alike in convergence and accommodation, but the right pupil did not react to light. This may be a congenital anomaly or the only expression of some encroaching organic affection. Lachmund has examined the pupil reflex in 27 cases of progressive paralysis and found it *abolished* in 20, with traces of a reaction in 2, normal reaction in 2, and unequal reaction in the two eyes in 4. In 2 cases the pupils contracted into an oval shape during convergence, the longest diameter upright when looking upward and horizontal when looking sideways, gradually becoming round. Both of these patients were taboparalytics.

57. **Adams-Stokes' Disease with Induration in Bundle of His.**—Karcher and Schaffner describe the autopsy findings in a case of Adams-Stokes' disease. The bundle of His was found to consist of connective tissue through half and more of its substance. The symptoms during life were tachysystole of the auricles with bradysystole of the ventricles. With a radial and carotid pulse rate of 33, the jugular pulse was three or four times as rapid. Twelve cases are cited from the literature in which the Adams-Stokes' disease during life was associated with induration of the bundle of His. In five there was interstitial cicatricial tissue at the apex besides that in the bundle of His; in another case the *Schwielen* were in the pericardium, and in the others the bundle was the site of syphilitic changes. In contrast to these positive cases, they mention others in which the bundle of His seemed to be normal with the Adams-Stokes' syndrome, and others in which there were no Adams-Stokes' symptoms, although the bundle of His was degenerated. They remark, in conclusion, that all these contradictory findings do not shake, in their opinion, the causal relationship between the pathologic changes in the bundle of His and the Adams-Stokes' syndrome.

63. **Diagnosis for Brain Surgery.**—Oppenheim has localized brain tumors and Krause has successfully removed them in a number of cases, their joint work having been previously mentioned in these columns. A difference of opinion has now arisen between them, Krause thinking that exploratory puncture of the brain by Neisser's technic is useless and a waste of time, while the by-effects sometimes obscure the diagnosis. Oppenheim, on the other hand, advocates it as occasionally of decisive diagnostic value. He relates his reasons for this view and cites a number of cases to show the difficulty of correct localization of a tumor when the secondary symptoms predominate. In several such cases autopsy revealed a tumor at an unsuspected point which could easily have been removed if discovered in time. The different phases of the symptoms are instructive, as they succeed each other, but it is too much to expect correct localization of the tumor from observations made during merely one of these phases. A diagnosis made "while you wait" is liable to be misleading. Enthusiasts, he reiterates, should be constantly warned of the limitations to correct localization of brain tumors. The general practitioner must also be repeatedly warned that the occasional brilliant successes are the exceptions, while in a large proportion of cases operative intervention fails on account of the uncertainty of the diagnosis or of the unfavorable character of the tumor or its multiplicity or complications, to say nothing of the gravity of the operation. It must be further impressed on the practitioner that the prospects for success are poorer with the duration of the affection, and that the patient can never be referred to the clinic for observation too early, and that the diagnosis should not be hurried. Trephining to relieve compression is very unsatisfactory, seldom giving more than transient relief and benefits vision but rarely.

66. **Saline and Sugar Infusions in Infants.**—Weiland states that injection of from 1 to 20 c.c. (16 m. to 5½ drams) of isotonic solutions of salt, cane or milk sugar in 50 infants induced no rise of temperature in any instance. The temperature was *never modified*, either, when as much as 150 c.c. (5 oz.) were given in a rectal enema. These findings contradict those of Schaps, who has reported actual fever after such infusions.

69. **Acute Peritonitis.**—In the course of this report on the experiences with acute peritonitis at the Moabit Hospital at Berlin, Federmann states that diffuse gonorrheal peritonitis is liable to heal spontaneously, as he has observed many times. It consequently does not require an early operation like peritonitis of other origin. Differentiation is often difficult, as the onset is stormy and the symptoms are grave. Exploratory puncture through the posterior vaginal vault will reveal the presence of gonococci in a rapidly made, dry preparation. In his experience the patients with acute peritonitis and a leucocytosis of 20,000 and over, operated on in the intermediate stage, all recovered. Leucocytosis of 15,000 or under by the third day, he says, contraindicates operative treatment for the time being, as the resisting powers are exhausted. He has never witnessed recovery in any case of suppurative peritonitis with low leucocytosis after the expiration of the early phase. In these cases the indications are to raise the resisting power, and the best results in this line are obtained by rectal saline infusion, a drop at a time, until several quarts are thus infused during the day. The general practitioner sees the sick man first, and in his hand lies the fate of the patient, as the prompt recognition of acute peritonitis is the main factor in its cure.

70. **Recent Epidemics of Diphtheria.**—Baginsky has been studying the 63 fatal cases of diphtheria at the Children's Hospital at Berlin in the last few years. In a few cases the disease seemed to be refractory to antitoxin. The recent epidemics confirm anew the benefits of serum treatment on the whole.

Deutsche medizinische Wochenschrift, Berlin.

July 9, XXXIV, No. 28, pp. 1217-1256.

71 *Angiosclerotic Gangrene and its Treatment by Arteriovenous Intubation. Wieting.
72 Cutaneous Tuberculin Reaction with Tubercle Bacilli Substance Precipitated with Iron. (Kutanreaktionen mit Eisenfällungsprodukten von Tuberkelbazillensubstanzen.) F. Ditthorn and W. Schultz.
73 *Simple Technic for Cultivating Meningococci. (Züchtung der Meningococcen.) H. Conradi.
74 *Determination and Functional Value of Hemoglobin. (Hämoglobinbestimmung.) H. P. T. Oerum.
75 Results of Operative Treatment of Tuberculosis of Ankle. ([illegible] Stich.
76 Tre[illegible] Muskat.
77 Spo[illegible] at Commencement of Delivery. H. Gans.
78 Fetal Ophthalmia. (Fötale Augenentzündungen.) R. Seefelder.

71. **Arteriovenous Intubation for Gangrene.**—Wieting reports from Constantinople what he thinks is the first completely successful case of clinical transplantation of blood vessels. The patient was a man of 40 with angiosclerosis of the legs, and the right leg had been amputated two years before on this account. Two months after the symptoms of impending gangrene had developed in the left leg Wieting implanted the femoral artery in the femoral vein, just below the mouth of the saphenous vein. He describes the simple technic and says that the foot became warm and pink at once after the operation. It was done under spinal anesthesia, and the patient has been free from symptoms and subjective disturbances since the operation, done last January.

73. **Cultivation of Meningococci.**—Conradi recommends the fluid derived by lumbar puncture as a favorable culture medium for meningococci. This is particularly convenient in cases of meningitis in which lumbar puncture is done as a therapeutic measure.

74. **The Functional Value of Hemoglobin.**—Oerum discusses the functional value of the blood, saying that the tint and the oxygen-binding property of the blood are elements which are independent of the hematin content (iron content). The blood of the Swiss averages only four-fifths the amount of hematin in the blood of the Danes, but it can bind fully as much oxygen as the latter. Its functional value is thus 1.25

in comparison with Danish blood. His measurements were made on thirty young Danish soldiers and 40 Swiss soldiers, and he cites figures which show that each 1,500 feet elevation brings an average increase of 800,000 red corpuscles. The contradictory findings in respect to the hemoglobin, with various technics, are explained.

Deutsche Zeitschrift fur Chirurgie, Leipsic.

June, XCIII, Nos 4 5, pp 325-504

79 *Improved Technic for Prostatectomy (Neue Methode der Prostatektomie) Wilms
80 Historical and Critical Study of Chondromata Osteitis, Bone Cysts and Similar Affections (Knochencysten, Chondrome, fibrose Ostitis und ahnliche Leiden) R Milner
81 Ileus from Constriction of Intestine by Tube (Seltene Form innerer Incarceration) T Voeckler
82 New Apparatus for Fractured Arm E Martini
83 Experimental Tetany After Parathyroidectomy, Enhanced Susceptibility of Offspring (Tetanie jugendlicher Ratten nach Parathyroidektomie) H Iselin
84 *Treatment of Acute Inflammatory Affections with Artificial Hyperemia; 505 Cases Blecher
85 *Surgery of the Pancreas (Pankreaschirurgie) A Dreifuss
86 Attempt to Explain Action of Bier's Hyperemia (Erklärung der Wirkungsweise der Bierschen Stauung im Granulations gewebe fistuloser fungoser Herde) E v Pelegyhazi
87 Symmetrical Lymphangioma of Salivary Glands (Lymph angiome der Mundspeicheldrüsen) E Hagenbach
88 Arrest of growth in Rats by Parathyroidectomy (Zur Kenntnis der Epithelkorperchen Funktion) H Iselin

79. **Improved Prostatectomy.**—Wilms gives an illustrated description of his technic for perineal removal of the prostate with the least danger to the rectum The prostate protrudes below the lower arch of the symphysis, and its side lobes are thus readily accessible through the perineum He makes the incision along the ascending ramus of the pubic bone for 4 or 5 cm. The tissues here can be pushed back each side, giving direct access to the lateral lobe In his three cases the incision was scarcely 1.5 cm deep

84 **Artificially Induced Hyperemia in Acute Inflammatory Infections.**—Blecher declares that the course of treatment was shorter and the functional results better under Bier's hyperemia in 505 cases than in the controls In 66 cases of recent trauma he applied the constricting band as a prophylactic measure after a crushing or other injury of the head, face or limbs and 57 healed by primary intention. He thinks that this prophylactic hyperemia by this technic has a promising future, especially in military surgery

85 **Surgery of the Pancreas.**—Dreifuss reports successful operation in three cases In the first the pancreas had been injured by a contusion Acute hemorrhagic pancreatitis required laparotomy twice in one case, and retroperitoneal evacuation of an abscess cured the other patient, a woman of 48, with acute necrosis of the pancreas The other patients were young men

Jahrbuch fur Kinderheilkunde, Berlin.

June 15 LXVII, No 6, pp 641 766

89 Scarlet Fever at Zurich, 1902 1906 N Tiktin Hausmann
90 *Congenital and Early Acquired Rachitis F Wieland

90. **Rachitis.**—From clinical and anatomic study of 130 cases of congenital or early acquired rachitis Wieland declares that there are no clinical signs of rachitis in the new born Congenital softness of the skull at the vertex is found in at least 20 per cent. of all children at term, but he affirms that this has nothing whatever to do with rachitis and that it speedily vanishes without ill results. After the onset of rachitis, a secondary softening of the skull is observed, either before or after the complete consolidation of the vertex softness This secondary softening of the skull begins invariably in the posterior and lowest parts of the skull. This craniotabes may retrogress, but other signs of rachitis are always evident Early acquired rachitis may cause the still unconsolidated primary softness of the skull at the vertex to spread over a larger area. These peculiar and hitherto misunderstood cases are distinguished by the disproportion between the apparent severity of the skull affection (rubber skull) and the rapidity with which it subsides—in consequence of the spontaneous and regular retrogression of the non-rachitic defects Treatment with phosphorus hastens the cure of these apparently severe cases of rachitis.

Medizinische Klinik, Berlin.

July 5, II No 27, pp 1011-1052.

91 *Diagnosis of Abscesses in Brain (Diagnose des Hirn abszesses) M Lewandowsky.
92 Strictures in Rectum C Goebel
93 Polycythemia with and w (Polyzythamie mit und (
94 *Kefir in Infant Feeding (K Diesler
95 *Transmission of Infection from Puerpera to Child (Infektion von Mutter auf Kind im Wochenbett.) K Mayer
96 Diagnosis of Typhoid in General Practice O Schellong
97 Therapeutic Application of Radioactive Substances from Mineral Waters K Aschoff
98 Actions of Normal Sera on Organism (Wirkungen normaler Sera auf dem Organismus) G Salus

July 12, No 28, pp. 1053 1092.

99 *Nerve strain as an Etiologic Factor in Nervous Affections. (Die Rolle des Aufbrauches bei den Nervenkrankheiten)
100 of Appendicitis and Peritonitis O.
101 *Metreurynter for Placenta Praevia. (Hysteréuryse bei Placenta Praevia) W Hannes
102 Therapeutic Applications of Radium Emanations A Strasser and A Selka
103 *Experiences with Treatment of Lupus P Wichmann
104 Nervous Heart Affections from Balneologic Standpoint (Die lebenswichtigen nervösen Herzkrankheiten) J. Jacob

91. **Diagnosis of Abscess in Brain.**—Lewandowsky relates the details of a number of typical cases of abscess in the brain In one case astereognosis—loss of power to recognize the shape of objects by touch—was at first the only symptom pointing to a focus in the parietal lobe, and the abscess was found here. In another case the first symptom noticed was a sudden stroke of apoplexy, followed by paralysis of the right arm, slight stiffness of the neck and deep stupor. An abscess was diagnosed from the stupor and signs of meningitis and the absence of choked disc and of signs of pressure on the brain A case of chronic bronchitis was erroneously diagnosed as a tuberculous affection, and the onset of signs of apparent meningitis was assumed to be the development of a tuberculous process. Autopsy revealed an abscess in the right hemisphere, with no signs of tuberculosis. In another case an abscess ran an absolutely latent course with sudden death from a metastatic process In marantic sinus thrombosis and hemiepileptic conditions in senile atrophy of the brain, the stupor is not so deep as with an abscess, and the signs of irritation are more diffuse. He refers also to the singleness of metastatic abscess in the brain and the absence, in many cases, of focal symptoms A boy of 10, three months after an injury to the brow, had headache and vomited, but there was no local tenderness nor fever or focal symptoms. An abscess was found at the site of the trauma. Lack of abnormally high pressure in the cerebrospinal fluid speaks against meningitis and against tumor. Lymphocytosis is not observed with a tumor, but it does not differentiate meningitis from an abscess. It can only be said that the majority of abscesses are not accompanied by lymphocytosis, while it is the rule in meningitis. Lymphocytosis with suspicion of abscess warns of impending perforation. Fever speaks for meningitis.

94. **Kefir in Infant Feeding.**—Diesler declares that kefir milk is the best of all acid preparations of milk and is an excellent food for healthy and sick infants. He recommends it as an inexpensive food for infants, and believes that it is destined to play an important part in the reduction of infant mortality. He describes how to prepare it, and relates his experience in a number of clinical cases, maintaining that it has saved many a child in his practice among the poor. Its chief advantage is that it is not affected by heat and remains unmodified by hot weather. He keeps a supply of the "mother" kefir on hand, and gives it to the mothers to prepare the milk themselves Kefir in tablet form does not act so well. The milk is boiled first. It has all the advantages of buttermilk with none of its disadvantages, he says.

95. **Transmission of Infection from Puerpera to Child.**—In one of the cases described the child died in the second week of streptococcus peritonitis, after eight days of health. The mother succumbed a few days later to sepsis from purulent phlebitis. The streptococci in each were apparently the same, and it is probable that the child became infected in dressing

the cord In another case an abscess in the nursing child contained the *Staphylococcus pyogenes albus* which could also be cultivated from an infiltration in the mother's breast The child had not been allowed to nurse during the acute mammitis but evidently there were still virulent germs left in the gland after the lesion had healed

99 **Nervous Affections from Nerve-Strain**—Edinger's previous communications on this subject of nervous affections from nerve strain have been summarized in these columns He is convinced that overfunctioning of a sound nerve or normal functioning of a degenerated or intoxicated nerve causes fatigue which may amount to exhaustion and the power of recuperation may be transiently or permanently lost Poisons like alcohol and lead reduce the recuperating power, and nerves subjected to strain from the occupation may experience exhaustion and ultimate paralysis and atrophy As a typical example he cites the case of a waiter, addicted to alcohol, who had paresis of the legs which subsided as he changed his occupation The carrying of heavy loads on his shoulder later was followed by paralysis of the shoulder muscles Edinger thinks that too little attention has been paid hitherto to the questions, What becomes of a normal nerve subjected to unduly great strain, or of a weak nerve of which normal functioning is demanded? and How does the central organ fare with these absolute or relative overdemands? His view that a constitutional, defective composition of a part leads to atrophy when functional demands are made on it throws light on the most diverse forms of congenital nervous affections Anatomically they all present the same picture the non inflammatory perishing of nerve substance, its place being taken by neuroglia tissue A similar process occurs in another group of nervous affections which are not congenital but result from the action of poisons as in the nervous affections after ergot poisoning, after pellagra and, above all after infection with syphilis, as in tabes and paralysis All these have an injurious influence even on nerves of which only normal function is demanded Physical exertion has long been known as affecting the development of tabes, men exposed to physical overexertion develop tabes in larger proportions than others free from physical stress Particularly instructive in this line are the cases in which tabes affects limbs that are used more than others, or when the first onset is observed after unusual physical exertion Paralysis develops in syphilitics with amazing frequency when life makes great demands on the brain It is rare, he says, among the home keeping natives of Switzerland and other countries, while a large proportion of those who have gone to other lands and then returned home developed paralysis Edinger, therefore, assumes that tabes is a 'superposed syndrome" which develops in those infected early, in consequence of functional demands on certain nerve tracts and their early exhaustion therefrom The typical cases resemble each other so closely only because the symptoms affect nerves which all men have occasion to use about the same The cases which deviate from this type have generally some special cause—always found if carefully sought for—this cause consisting in special demands on, or special sparing of, these nerve tracts He regards general paralysis as the result of functional demands on the brain cortex in metasyphilitics These views have great importance for treatment, and especially for prophylaxis, guarding the patients from all extra demands on their system, from long physiologic retention of urine (to avert paralysis of the bladder), from too intense measures of any kind, courses of mineral waters, etc Every means should be adopted to spare the patients functional and mental effort of any kind He has been applying these principles in his practice for some time and states that the results have been far superior to anything he has previously realized

101 **Metreurynter for Placenta Prævia**—Hannes reports from Kustner's clinic at Breslau that in 119 cases of placenta prævia in which the metreurynter was used the mortality was much less than with other technics and three times as many living children were born as in other clinics in which combined version is the preferred technic With version the placenta is frequently further detached *and in doing version there is often* fetal collision with the umbilical cord—all of which is avoided with the metreurynter It can be pushed through total placenta prævia and thus arrest the hemorrhage in the simplest and safest manner while traction on it may promote good rhythmic uterine contractions It should be the size of a normally large fetal head, for which about 600 c c (20 oz) of fluid are required

103 **Treatment of Lupus**—Wichmann reviews the experiences at the Lupus Institute near Hamburg with 263 lupus patients In 174 of the cases the affection began before the age of 13, and he emphasizes the necessity for systematic treatment at the incipiency In far too many cases the small initial lupus focus was cauterized and the case dismissed as cured A few months later, instead of a simple, uncomplicated lupus, the physician had to deal with an extensive cauterization scar sown with lupus nodules, which naturally made effectual treatment a much more difficult matter He urges that it is actual malpractice to cauterize an initial lupus with acids or the actual cautery If excision is refused, radiotherapy should be applied, it at least can do no harm in the hands of an expert

Munchener medizinische Wochenschrift

July 7 LV No 27 pp 1417 1472

105 *True Nature of 'Alternating Heart Action (Wesen des Herzalternans) H E Hering
106 Importance of Urobilinuria for the Diagnosis of Liver Affections Fischler
107 *Treatment of Paralysis by Plastic Operations on Nerves (Behandlung von Lahmungen mittels Nervenplastik) H Spitzy
108 *Monosymptomatic Expectation Neurosis (Erwartungsneurose) M Isserlin
109 History of Origin and Treatment of Hernia of Diaphragm (Zwerchfellbruch) W Koch
110 Etiology of Deforming Cervical Spondylitis G Preiser

105 **Nature of "Alternating" Heart Action**—Hering states that this disturbance is the result of a periodically recurring partial asystole Part of the muscle fibers fail to respond to the stimulus as it arrives He gives tracings of the pulsus alternans from experimental and clinical research on which he bases these views

107 **Treatment of Paralysis by Plastic Operations on the Nerves.**—The history of nerve surgery and considerable personal research in this line are related by Spitzy He says that 57 cases are now on record of cure of facial paralysis by grafting the paralyzed nerve on one of its sound neighbors His experience has been mostly with peroneal or radial paralysis, and the results after several years are extremely gratifying One boy of 12 with paralysis from fracture of the upper arm during birth has been cured by central partial implantation of the median nerve in the paralyzed radial He can now guide a bicycle and play the piano with the injured hand Spitzy states that surgery of the nerves owes much to Bethe and that his works on regeneration of severed and sutured nerves should be studied by those interested in this branch of surgery The literature to date reports fully 90 per cent cures from primary and secondary suture of nerves

108 **"Expectation Neurosis"**—Isserlin emphasizes the necessity for differentiating this disorder from other nervous affections If its nature is misunderstood, all attempts at treatment generally only exaggerate the disturbances There is only one method of treatment, the systematic influencing of the patient's mind, especially by hypnotic measures This proves effectual even in the severest cases of this monosymptomatic hysteria A number of typical examples are related, among them a case of smarting in the eyes, with headache, in an artist, after long reading and painting, until the patient was unable to write or even bear the sunlight after ten years of these disturbances Recovery was complete after four weeks of treatment by hypnosis Another patient was a robust man who found that he was unable to write on account of ataxic movements in the right hand This disturbance had been noted for two years, coming on after overexertion of the arm in fencing Treatment by suggestion cured the patient permanently in five days Another patient was a boy of 8 who had a spasmodic cough at every attempt to eat or to

swallow. Weakness of the legs was the trouble in other cases—all these patients were cured by a brief course of suggestion. This class of cases is described by Kraepelin as an "expectation neurosis," a pathologic reaction from the internal tension resulting from the anxious waiting for a given event.

Therapeutische Monatshefte, Berlin.

July, XXII, No. 7, pp. 329-382.

111 *Treatment of Diphtheritic Paralysis. (Diphtherische Lähmungen.) Kohts.
112 *Indications and Principles for Medicinal and Dietetic Treatment of Neurasthenia. (Behandlung der Neurastheniker.) R. Bing.
113 Tasks and Results of Modern Gynecology and Obstetrics. (Erfolge und Aufgaben der modernen Geburtshilfe und Gynäkologie.) P. Kroemer.
114 Scarlet Fever and its Treatment. (Scharlach.) Garlipp.
115 Ocular Tuberculin Reaction. (Ophthalmo-Reaktion und Tuberkulose.) H. Naegeli-Akerblom and P. Vernier.
116 Cholelithiasis and Diabetes Mellitus. M. Hedinger.
117 Veronal in Obstetric Practice. A. Reich and A. Herzfeld (New York).
118 Negative Food Value of Alcohol and its Action as a Specific Nerve Poison. (Der theoretische Nährwert des Alkohols.) M. Kassowitz.
119 Maximum of Elimination of Cresol in the Dog After Administration of Lysol. (Höhe der Kresolausscheidung beim Hunde nach Lysolverabreichung.) R. Friedländer.

111. **Treatment of Diphtheritic Paralysis.**—Kohts gives the particulars of ten cases of postdiphtheria paralysis in which the patients were cured by injections of from 6,000 to 35,000 units of diphtheria antitoxin. In severe paralysis minute doses of strychnin were also injected. The patients were all completely cured in from two to four months.

112. **Treatment of Neurasthenia.**—Bing's long study of this subject emphasizes the three categories of symptoms in neurasthenia: the purely psychic, the subjective disturbances and the objective manifestations, which may range from urticaria, tremor and pulse and blood pressure variations to abnormal secretory conditions in the mucosa of stomach and intestines, etc. The manifold morbid physical phenomena indicate that neurasthenia is a general neurosis in the fullest sense of the term. It is extremely important, however, to convince the patient that these various manifestations are not separate affections, but are all the outcome of a single abnormal condition of the nervous system as a whole. He discusses medicinal and dietetic measures, urging that neurasthenics should eat a little every hour, never letting the stomach be entirely empty. Even when attending to business or work of any kind, the patient can have crackers or figs or dried prunes in his pocket and a tablet of chocolate in his desk and eat a little every hour, drinking a little milk. Milk should be the main reliance. The principal indications for these dietetic regulations are in all cases in which there is a sense of oppression in the head and tendency to vertigo. In many cases of nervous dyspepsia the patients respond in an equally favorable manner to this form of dieting. Arsenic and valerian are favorites witn him if drugs are required for neurasthenia. He gives minute doses of the former, keeping it up for months.

Virchows Archiv, Berlin.

CXCIII, No. 1, pp. 1-175.

120 Deformities in the Limbs. (Missbildungen von Extremitäten.) B. Slingenberg.
121 Primary Tumor of Pleura. (Fibro sarcoma myxomatodes pleuræ permagnum.) R. Mehrdorf.
122 Congenital Lipoma and Tail-like Formations in Man. (Kongenitale Lipome und schwanzähnliche Bildungen beim Menschen.) F. Werner.
123 Hyalin Corpuscles in Plasma Cells. (Russellsche Körperschen.) J. Fick.
124 Hemorrhage in the Adrenal Gland. (Nebennierenblutungen.) M. Lissauer.
125 Study of Pigmentation After Prolonged Administration of Silver Preparations. (Argyrie.) S. Dohi.
126 Benign Tonsillar Mycosis. (Pharyngitis ceratosa punctata.) A. M. Januszkiewicz.
127 Liver Glycogen and Structure of Liver Cell. J. Arnold.

Zeitschrift für klinische Medizin, Berlin.

LXV, Nos. 5-6, pp. 353-518. Last indexed June 20, p. 2118.

128 Influence of External Temperature on Experimental Glycosuria. (Einfluss der Aussentemperatur auf experimentelle Glykosurie.) R. Kohler.
129 Systolic Murmur in Simple Aortic Insufficiency. (Systolisches Geräusch bei der reinen Aorten-Insufficienz.) M. Conto.
130 Specificity of Organ Antigens. A. Schütze.
131 *Tabes and Syphilis. (Tabes und Lues.) Id.
132 Respiratory Metabolism of an Obese Man, Fasting and After Eating. (Respiratorische Stoffwechsel eines Fettsüchtigen im nüchternen Zustand und nach Nahrungsaufnahme.) R. Staehelin.
133 Daily Variations in Work of Kidneys on a Constant Diet. (Tägliche Variationen der Nierenleistung bei konstanter Kost.) M. Brauner.
134 Physical and Clinical Study of Râles and Friction Sounds. (Die sog. Rassel- und Reibegeräusche.) Buttersack.
135 Laws Regulating Elimination of Sugar in Diabetes. (Gesetze der Zuckerausscheidung beim Diabetes mellitus.) W. Falta. Id. J. L. Whitney.
136 *"Permeation" Method of Gastrointestinal Diagnosis and Treatment. (Permeation und die Anwendung ihrer Prinzipien zur Untersuchung und Behandlung des Magen-Darmkanals.) G. Scheltema.

131. **Tabes and Syphilis.**—Schütze reports 100 cases of tabes in which the new biologic tests were applied repeatedly. The findings testify, he says, to the great importance of the complement-binding test for the serum diagnosis of syphilis. He regards this as one of the finest fruits of modern research on immunity, which practical medicine will find of inestimable value. In 69 per cent. of all cases of tabes the absence of hemolysis, that is, the positive phenomenon of complement binding, was conspicuous in the test with the serum or cerebrospinal fluid or both.

136. **"Permeation Method" of Gastrointestinal Diagnosis.**—Scheltema announced a few months ago that valuable information and opportunity for treatment could be obtained by using a fine flexible rubber tube with a small weight fastened in the end, this end swallowed like a stomach tube. The tube is from 9 to 18 feet long or longer, and in the course of time the loaded end emerges from the anus. He gives some Röntgen pictures showing the tube in a frog and in a child, and describes his experiences with large animals with partial and complete permeation. It requires from 18 to 60 hours for the loaded end of the tube to pass the pylorus, but it traverses the rest of the route more rapidly. He asserts that this method of permeation makes it possible to examine conditions and apply treatment at any given point in the intestinal canal. Air can be admitted to the spot in case of anaërobic mischief, bacterial toxins can be combated in their nidus, and drugs can be applied exactly at the point at which they are needed, without taxing or injuring other organs.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

PAIN, Its Causation and Diagnostic Significance in Internal Diseases. By Dr. Rudolph Schmidt, Assistant in the Clinic of Hofrat von Neusser, Vienna. Translated and Edited by Karl M. Vogel, M.D., Instructor in Pathology, College of Physicians and Surgeons, Columbia University, and Hans Zinsser, A.M., M.D., Instructor in Bacteriology, College of Physicians and Surgeons, Columbia University. Cloth. Pp. 326, with illustrations. Price, $3.00. Philadelphia: J. B. Lippincott Co.

TRANSACTIONS OF THE ROYAL ACADEMY OF MEDICINE, Ireland. Vol. xxvi. Edited by James Craig, M.D., F.R.C.P.I., Physician to the Meath Hospital and County Dublin Infirmary. Cloth. Pp. 432, with illustrations. Dublin: John Falconer, 1908.

PROCEEDINGS OF THE THIRTY-EIGHTH ANNUAL MEETING OF THE NEW JERSEY PHARMACEUTICAL ASSOCIATION, Held at Atlantic City, N. J., June, 1908. Cloth. Pp. 236, with illustrations. Somerville: Press of the Unionist-Gazette, 1908.

HEALTH AND BEAUTY. By J. V. Shoemaker, LL.D., M.D., Clinical Professor of Diseases of the Skin in the Medico-Chirurgical College of Philadelphia. Cloth. Pp. 476. Price, $3.00. Philadelphia: F. A. Davis Co.

THE AIR AND VENTILATION OF SUBWAYS. By George A. Soper, Ph.D., Member of American Society of Civil Engineers. Cloth. Pp. 244, with illustrations. Price, $2.50. New York: John Wiley & Sons, 1908.

PHARMACEUTICAL PREPARATIONS. Vol. i. By A. Emil Hiss, Ph.G., and Albert E. Ebert, Ph.M., Ph.D. Cloth Pp. 576. Price, $3 00. Chicago: G. P. Engelhard & Co., 1908.

BULLETIN OF THE BUREAU OF LABOR. Department of Commerce and Labor. No. 75—March, 1908. Paper. Pp. 663. Washington: Government Printing Office, 1908.

PRELIMINARY ANNOUNCEMENT OF THE INTERNATIONAL CONGRESS ON TUBERCULOSIS. Washington, D. C., September 21 to October 12, 1908. Paper. Pp. 188.

157TH ANNUAL REPORT OF THE PENNSYLVANIA HOSPITAL. Paper Pp. 119. Philadelphia: J. B. Lippincott Co.

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Address

THE OPPOSITION TO MEDICAL RESEARCH.

CHAIRMAN'S ADDRESS IN THE SECTION ON PATHOLOGY, AND PHYSIOLOGY, AMERICAN MEDICAL ASSOCIATION, JUNE 5-8, 1908.

W. B. CANNON, A.M., M.D.
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BOSTON.

In several states during the past year there has been vigorous agitation for legislative restriction of the use of animals for medical research. This agitation is not new. For many years in Massachusetts petitioners have appealed for laws controlling laboratory methods, and previous attempts to secure such laws have been made also in Illinois, Pennsylvania and New York. In England, where a restrictive act has been enforced since 1876, still more drastic law is now demanded.

To those who are active in promoting medical science, the experience of England is particularly instructive, because the legislation asked for in this country is largely based on the English act of 1876. This act is pointed to as a model. But the present appeal in England for more drastic law indicates that even were the English act transferred to our statutes, it would be merely initial and temporary, and that it would not be permanently satisfactory to many of the agitators. Indeed, both individuals and societies hostile to the laboratories have clearly stated that what they desire is total abolition of animal experiments, and that restrictive legislation is the first step to that end. The prospect, therefore, is toward an indefinitely extended struggle for the legislative control of the methods of medical research.

The controversy is one in which violent emotions have been aroused. In some instances the attack on scientific methods has been forced with unmitigated bitterness. Under such conditions each side is prone to be blindly unjust to the other. Until the contestants can meet each other fairly and dispassionately, the controversy can never be limited to the merits of the opposed causes. It must always involve irrelevant personalities. Is it not, therefore, of prime importance to inquire into the reasons for the unfair and irritating misconceptions which prevail? So it seemed to me; and I propose to consider some of these reasons, such as the conflict of testimony, the experience and characteristics of the contestants, certain assumptions regarding animals, and the questions of motive.

THE CONFLICTING STATEMENTS AS TO PAINFUL EXPERIMENTS.

The use of animals for experimental purposes is commonly called "vivisection." It is an unfortunate word, because it has come to have various meanings which are not clearly distinguished. To the "antivivisectionist" the word vivisection too frequently signifies the cutting or dissection of sentient living animals, bound or restrained, and subjected to the full torture of extensive operation without anesthesia. The repeated tales of cruelty, the illustrations of instruments used in laboratory service, and the imaginary pictures of the sufferings which animals are supposed to endure at the hands of the experimenter, indicate the hideous significance ordinarily attached to the word vivisection. To the medical investigator, on the contrary, the word means something quite different. It means, to be sure, operations on living animals, but it does not imply attendant pain. If an animal is anesthetized, and operated on, and is killed without recovery from anesthesia, evidently the operation has not caused pain to the animal. So far as the experience of the animal is concerned, the operation would not have been different in effect, if the animal had first been killed, and later dissected. Now it has been shown repeatedly that in almost all physiologic experiments the observations of the living processes are made in precisely this way, i. e., while the animals are on the way to death by anesthesia. In pathologic and bacteriologic investigation injections are made and sometimes diseases are produced; and in surgical research it is occasionally necessary, after a painless operation, to keep the animals alive in order to observe the effects of the surgical procedure. It is probable, in these instances of inoculation and aseptic operation, that the animals feel ill, as they do with a distemper. Even if the lower animals were as sensitive as man, the pain, if we may judge from human experience, would not be great. There is abundant evidence, however, that the lower animals are not so sensitive as man. And, furthermore, these bacteriologic and surgical experiments are precisely the experiments which bear most directly on the explanation and the cure of disease in the much more sensitive organism, the human being.

In an inquiry made some years ago, Dr. C. F. Hodge found that of nearly 1,700 animals (including 866 frogs) used for experimental purposes in Massachusetts in one year, the operations in 64 per cent. were painless; in 12.2 per cent. as painful as vaccination; in 0.4 per cent. as painful as the healing of a wound; in 1.6 per cent. as painful as the effect of poison, and in 21.8 per cent. as painful as disease.[1] The official figures for Great Britain for 1906, are as follows:

	Per cent.
Inoculations or similar methods not involving any operation	93.96
Animals killed under anesthetic	3.10
Animals killed under anesthetic after a demonstration	0.34
Animals allowed to recover from anesthetic (no observation or stimulation likely to cause pain and no further operative procedure allowed without anesthetic)	2.60
	100.00

Since the pain of inoculation is trifling, and since in the vast majority of operations even on human beings

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1. Pop. Sc. Month., 1896, xlix, 783.

the aseptic healing of wounds causes no considerable pain after full recovery from the anesthetic,[2] and since much of the suffering from disease is due to the anxiety for friends or relatives rather than to physical distress, the total body of pain resulting from animal experimentation is in all antivivisection literature grossly exaggerated.

It has been estimated that not more than 1 per cent. of the experimental procedures are really painful. As a physiologist, Hodge has testified that in more than ten years' experience in various laboratories in this country and abroad he had never had occasion to perform or witness an experiment of this painful class. I can testify to the same experience in my own career of twelve years as medical student and physiologist. And Professor Starling, writing of the use of dogs for research, states that though he has been engaged in the experimental pursuit of physiology for the last seventeen years, on no occasion has he seen pain inflicted on a dog or cat in any physiologic laboratory in England.

In opposition to this testimony as to the practically painless character of the immense majority of operations in experimental medicine, are the statements found on all sides in the writings of antivivisectionists. Some of these cases are records of experiments performed more than sixty years ago, before the use of anesthetics; some of them are frankly of the class of experiments involving pain or discomfort; and some of them are clear instances of misinterpretation by persons too unfamiliar with animal functions and the action of anesthetics to understand ordinary physiologic description. On the assumption that no one concerned in this discussion desires to imply an untruth, it is evident that the failure to recognize the extremely small percentage of cases involving pain, when such cases are cited, is clearly misleading. The failure to discriminate between the various sorts of experiments, the diffusion of the impression that animal experiments are almost uniformly attended with extremes of suffering, the neglect of the great accumulation of fact that testifies to the splendid results of medical research, the monotonous repetition of the hostile opinions of a few physicians long since dead—these characteristics of the attacks on medical investigators lead to the inference that the agitators for legislation are not as devoted as they should be to the spirit of fair play.

The belief that there is great suffering among animals used for experimental purposes is based to a large extent on a refusal to accept the statements of the experimenters. "The vivisectionist anesthesia I have no confidence in, and my association has no confidence in,"[3] such is the characteristic attitude of the opponents of animal experimentation. "I think that all these experimenters have the greatest contempt for the Act of Parliament,"[4] these are the words with which the honorary secretary of the National Antivivisection Society of England expresses his belief that English investigators do not hesitate to inflict pain in defiance of the law. Indeed, he states further, "The knowledge that horrible mutilations may be daily and hourly executed on the bodies of living creatures with no adequate security for their insensibility makes very many humane people profoundly miserable, it rises day and night between them and their peace of minds, it haunts their lives waking and asleep, it deprives them of joy in this world which otherwise might be theirs."[5] From what may be found in the writings of other antivivisectionists this implication of secret atrocities in laboratories would be widely accepted as highly probable.

In no feature of the controversy is the difference between the opposing parties more clearly marked than in this attitude regarding the experience of the animals at the hands of investigators. The investigators state that they know nothing of the tortures and horrible cruelties that have been imagined; indeed, that the vast majority of operations are practically painless. The critics, on the other hand, are not only suspicious of the experimenter and distrustful of his testimony, but have even ventured to make accusation of deliberate lying. In any such conflict of testimony it is desirable to inquire into the qualifications of the witnesses in order that a proper estimate may be placed on the opposing statements.

QUALIFICATIONS FOR TESTIFYING.

The reason for distrusting the word of medical investigators is not evident. In almost all instances these men are trained scholars; in many instances they are also practitioners of medicine in whom members of the community place supreme confidence. As men of science their service to their fellow men consists in the search for new truth. In this process of discovery their eyes and ears are especially exercised in exact observation, their minds are continually disciplined to draw only justifiable inferences from what they have observed. They are, therefore, well qualified to report regarding the events which occur in laboratories.

In reporting their experiments it is of the greatest importance, in the interest of truth, that investigators state precisely the details of the procedure and the results that were secured. Every new investigation is a venture into the unknown from regions already known,—an extension of previous knowledge. It is the duty of investigators in their reports to give credit to those who secured the previous knowledge. They are, therefore, accustomed to study the original records of investigation, and to make exact reference to the words on which their own statements are based.

That men of science are infallible, I do not for a moment contend. But I maintain that the search for what is true, and the exact reporting of what is found, are the ideals which animate the lives of scientific investigators, and that the pursuit of these ideals is excellent training in telling the truth.

In examining the qualifications of antivivisectionists to bear reliable testimony against the methods of medical research, it is first necessary to consider the sorts of persons that are to be found among them. If one may judge from representatives at legislative hearings and from names on petitions, the opponents of research consist of many women, fewer clergymen, lawyers, artists and business men, and a relatively very small number of physicians. Setting aside for the moment the physicians who sign petitions for restrictive legislation, and considering the other opponents of medical research, one notes that they are persons without training in the methods of biologic investigation. They do not enter the laboratories in which they declare animals are cruelly tortured, they do not see the operations they criticise, they do not realize that there are various degrees of anesthesia (used by surgeons in operations on man), they do not know enough of the history of the medical sciences to judge the great contributions which experiments on animals have given to practical medicine and surgery, they are unacquainted with the dire problems still presented by diseases which continue to kill their thousands and tens of thousands. With all this lack of positive qualification for passing judgment on the work of the investigator there is commonly combined a keen sensibility and a vivid imagination.

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[2] M. H. Richardson, Animal Experimentation, p. 53. Boston, 1902.

[3] Testimony of Mrs. K. Cook, Appendix to First Report of the Royal Commission on Vivisection, October to December, 1906, p. 72.

[4] Testimony of Hon. S. Coleridge, Appendix of the Third Report of the Royal Commission on Vivisection. April to July, 1907, p. 183.

[5] Ibid., p. 146.

Precisely this combination of real ignorance with unchecked imagination causes most of the difficulty. Imagination is permitted to take the place of careful inquiry. The tormenting of animals is assumed to prevail in medical laboratories, with no adequate proof that such is the case. Dark suspicions and insinuations are suggested against honorable men whose lives are devoted through research to the relief of human ills. Absurd claims and grotesque misinterpretations result from this eager fancy allowed free play in reading the records of experiments. Commenting on an experiment in which the peripheral end of a nerve, which had been severed under ether, was stimulated, Mr. P. G. Peabody stated, "It will be readily seen, even by the casual reader, that it involves an amount of agony beyond which science is unable to go and to approximate to which is impossible except by a person who has devoted long years to the study of nerves."[6] The casual layman may indeed be impressed by this apparently authoritative declaration that here is a case of atrocious cruelty; but the most primitive acquaintance with the nature of nervous conduction would have shown the utter absurdity of the assumption that even the slightest pain could have been inflicted by stimulating a piece of nerve separated from the central nervous system. This case is merely an example of many similar cases that might be cited.

Not only are most antivivisectionists, because of ignorance, incapable of intelligent interpretation of the records of experiments, they are also too frequently lacking in those scholarly qualities which demand accuracy of reference and exactness of quotation. Some years ago Dr. W. W. Keen published a large number of examples from antivivisection literature, in which the references were vague, inaccurate or garbled, and in some instances showed extraordinary and repeated interpolations and mistranslations.[7] Only last year there appeared an essay against vivisection, in which experiments performed under anesthesia are quoted as evidence of horrible cruelty, an experiment never performed at all is cited to show the callousness of the investigator, and arguments and statements which have been clearly answered or qualified, are repeated in their original form, as if they expressed the exact truth. This essay was granted a prize of $300, by a committee of antivivisectionists. Its author declares that the object of her article is "not to bandy words with professional and learned men," but to state simply "some thoroughly authenticated facts."[8]

Here, then, are the opposed parties; on the one side men trained to close observation, to careful inference, and to exact statement; on the other side persons revealing repeatedly that they are ignorant of the subject they denounce, that they are incapable of interpreting intelligently what they read, and that they let imagination play uncontrolled in regions they have never visited and in procedures they have never witnessed. These two parties can never be reconciled until both have the same desire to know the truth, and the same willingness to search for it with clear eyes and unbiased mind.

THE COMPLEX RELATIONS BETWEEN RESEARCH AND MEDICAL AND SURGICAL PRACTICE.

As already stated, the men engaged in research in the medical sciences are trained investigators. Most of them have had a long course in medicine, and after that they have had specialized experience in their chosen field of labor. They are engaged in a study of by far the most complicated structures and the most complicated processes in nature, the structures and processes of highly developed animals. And not only are the individual processes intricate, but the animals themselves are intricately related in the nexus of living beings. So complex are the relations that in the fight against disease an immediate and fundamental answer to the urgent practical problem is usually impossible. Each problem must be analyzed into smaller and simpler problems, and these must be patiently investigated, one by one, before the results can be combined into a solution of the practical difficulty.

Thus the question of the proper method of checking the spread of tuberculosis depends primarily on a knowledge of how the disease is spread, and that knowledge, in turn, depends on a knowledge of the cause of the disease, and that depends on a study of tuberculous tissues, and the discovery that in these tissues are bacilli, and the demonstration that these bacilli when separated in pure state and injected by themselves into animals, will produce the disease tuberculosis; and from this point the dependence runs back in all directions—to the discovery of the microscope and its perfection, to the methods of histologic investigation and the use of staining reagents, to suggestions from the study of alcoholic, lactic and acetic fermentations, to the laborious first proof that infectious diseases result from micro-organisms, and to innumerable other factors, which at every step determined whether or not progress could be made. By the failure of any one of this complex group of factors the development of our present methods of dealing practically with the spread of tuberculosis might have been stopped absolutely.

This sketch of the development of our intelligence regarding tuberculosis is only a fair example of the intricate interweaving of knowledge. If all the bearings of every discovery could be at once ascertained, or if every investigator could foresee where his advance would be delayed by ignorance in closely related fields, it might be possible to move forward with greater directness. But these conditions are impossible. The relations are too intricate. Knowledge has to be pieced together after slow and tedious labor in small realms of fact. Yet though the realm any man explores must be small and limited, he has the assurance that just in so far as he sees clearly and tells exactly what he sees, his contribution will fit in with other contributions and thus will find its value in the growing body of truth.

Yellow fever has practically been abolished in Cuba where it was a devastating disease and a constant menace to our southern cities. The glory of that service has justly been bestowed on the army surgeons who proved the manner in which the disease is conveyed from one person to another. It should not be forgotten, however, that the beneficent results of their work were due in part to the entomologists who had previously studied the veins and scales on the wings, and the hairs and scales on the bodies of mosquitoes, and had observed the ways in which mosquitoes reproduce. Surely these studies appear remote enough from the great human problems of disease and death. Yet how closely are they involved!

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[6] Leaflet published by the N. E. Antivivisection Society.
[7] THE JOURNAL A. M. A., 1901, xxxvi, 500.
[8] Britton: Our Dumb Animals. 1908, xl, 121.

This complexity of the relation between discoveries and practice has important bearings in the present discussion of the opposition to medical research. It is the certainty that we are still wofully ignorant of many of the problems of disease, and that every fragment of biologic knowledge may be useful in solving these problems—it is this certainty, and the sincere conviction that the service he performs is in the highest sense humane, that cause the medical investigator to oppose any attempt to check the freedom of investigation. On the other hand, it is the failure of the inexperienced layman to appreciate the complicated relation between investigation and practice, that causes him to look somewhat scornfully on this or that special study and inquire with some warmth, "What can be the use of that?"

In antivivisection writings this question of utility is frequently asked; it is sometimes answered by the statement that all animal experimentation is worse than useless. And in the popular mind the statement is received unchallenged. No doubt some of the widespread ignorance of the relations between medical research and its practical bearings exists because the profession has made no attempt to enlighten the public on these matters. But how many physicians are capable of elucidating these complex relations? Certainly their training in most medical schools does not give them any clear notion of the sources of their knowledge. Their authorities are their professors and their textbooks. The urgency of teaching what to do does not always admit teaching the why and wherefore, and how the why and wherefore were discovered. Just as very few of us know the processes through which our common possessions, such as our clothes, for example, must go before they belong to us, so, too, the student of medicine knows little of the years of patient investigation which preceded the results he learns to use in his practice.

Under the circumstances it is not to be wondered at that physicians can be secured to sign petitions for laws restricting medical investigation. The proposed law seems harmless, an eager patient is interested, and the amiable doctor signs. The fact that physicians' names are on the list is regarded as the strongest support of the petitioners. But, again, the inquiry must be made, What do they know about the conditions of medical research? What do they know of its relations to practice?

Do the petitioners for restrictive legislation realize that the entire fundamental conception of infectious diseases was established by Pasteur through experiments on animals, and that all the modern methods of checking these diseases arise from that conception? Do they understand that some of the most important means of early diagnosis, most important not only for the individual but for the community as well, are dependent on the use of animals? Do they know that methods of treatment, of the greatest value, such as are used in rabies and diphtheria, for example, have been determined by animal experimentation? Do they recognize the necessity of employing animal tests in assuring pure food and pure water to a community? As physicians or as patients are they aware that in using chloral, sulphonal, trional, cocain, eucain, antipyrin, acetanilid, physostigmin, strophanthus, amyl nitrite, adrenalin, thyroid extract—are they aware that they are using *drugs discovered or first demonstrated by observations* on animals? I have heard antivivisectionists declare that they would refuse to profit by discoveries made on animals. This declaration shows their profound ignorance of the interdependence of modern medical and surgical practice and modern hygiene, on the results of animal experiments. In our civilization it is impossible to escape from the beneficent results of such experiments. We are surrounded by the protection that animals have afforded us. Even the warnings in the street cars against spitting are there because animal experiments proved that such warnings were necessary for our safety.

The scientific application of the experimental method has transformed the world of commerce and industry. The marvel of that transformation is a story that man tells with a just pride in his own achievement. The same sort of painstaking search for knowledge that gave man control of the forces of inorganic nature, has given him most of the control which he now has over the forces of organic nature. It was the method of experiment applied to animals that wrought the change from the empirical medicine of sixty years ago to such exactness of treatment as modern medicine can utilize. And just as the future growth in the physical world must wait further discoveries and new applications of knowledge, so in the realm of biology and medicine, the hope of progress must rest on a continuation of the method which has brought us thus far out of the darkness of the unknown—it must rest on the study of normal and pathologic processes that go on in living animals.

ASSUMPTIONS REGARDING ANIMALS.

Of the animals used in medical research those which rouse the greatest feeling are the dog and the cat. Throughout known history these animals have been the companions of man. They are household pets. The dog especially is capable of exhibiting a degree of affection and devotion which calls forth a like affection and devotion from his master. It is characteristic of our ways of thinking that when a general statement is made most of us interpret it in those concrete terms with which we are best acquainted—when the statement is made that dogs and cats are vivisected we are likely to think of our own dog or cat in relation to this possibility. This tendency to conceive general propositions concretely in accordance with personal experience, novelists and story-tellers, with ignorance and imagination, have utilized to harrow the feelings of animal lovers and thus to turn deep-seated sentiment strongly against the methods of medical research.

In every large city the accumulation of stray dogs and cats is a menace to public welfare. These wandering dogs are frequently vicious, they bite one another, they fight and sometimes kill dogs that are well-behaved pets, and in their wanderings they serve to keep existent the dread disease—hydrophobia. These dangers are recognized as community dangers, and instead of all dogs having the right to life, liberty and the pursuit of happiness, which some antivivisectionists imply they should have, stray dogs are collected from the streets and are put to death. In London more than 20,000 dogs are annually suffocated in the lethal chamber. In Boston between 3,000 and 4,000 dogs and between 13,000 and 15,000 cats are killed every year by an endowed organization and by public officials. The records of every large city would tell a similar tale.

The dogs and cats used in medical research are just such animals—stray animals, often bedraggled and vicious, and savage from hunger and neglect, that are brought into the laboratories from the streets. In a medical school in which active research is progressing, two or there hundred of these stray animals might be used in a year. During their confinement they are well fed and well cared for.

On their way to death in the laboratories they serve to increase biologic knowledge, knowledge of great value to medicine and surgery; thereby they contribute to the alleviation of human suffering. In the public pound the lives of their wretched fellows go out with no service rendered. It is mere useless death.

There is no question that these thousands of dogs must die. Granted that in almost all cases there is no greater discomfort in the one way to death than in the other, which is the more desirable way for these doomed animals to die—while rendering service to their fellow-creatures, or without benefit to any one? This is the question that should be raised when there is talk of the vivisection of dogs and cats. And I believe that in time an enlightened community will not hesitate to pronounce in favor of the way which renders human service.

THE SIMILARITY OF MOTIVE.

It is the contention of the antivivisectionists that their movement is a crusade against pain. Their opposition to medical research is chiefly based on the belief that pain is commonly inflicted on animals in laboratories to a degree too horrifying to endure. So convinced are they of the existence of torments that they have not hesitated to call laboratory workers "fiends," "demons," "human monsters," "diabolical vivisectors," nor to characterize medical research as a "vile pursuit," "a devilish science," "an inhuman as well as a criminal practice," "an organized system of barbarity." These are merely sample epithets. Believing that these things are true, the opponents of animal experimentation are intent on checking it or abolishing it altogether—with this "plague of scientific cruelty" the only cure is to "stamp it out." The medical investigators declare that they, too, are on a great crusade against pain. But they take definite issue with the methods of their opponents.

In the first place, the investigators object to any step tending to check the use of animals in medical research. They maintain that such interference is not justified by the present treatment of the experimental animals. They declare that the imagined horrors of medical research do not exist. The insane lust for blood, the callousness to the infliction of pain, which are attributed to the experimenters, they resent as most absurd and unjust accusations. Only the moral degenerate is capable of inflicting the torments that the antivivisectionists imagine. No one who is acquainted with the leaders in medical research, who are responsible for the work done in the laboratories, can believe for a moment that they are moral degenerates.

The medical investigators further maintain that judgment should be based on knowledge, not ignorance. They rightly insist that their critics are ignorant—ignorant of the conditions of medical research and ignorant of the complex relations of the medical sciences to medical and surgical practice. And they contend that these critics in their ignorance are endeavoring to stop that experimental study of physiology and pathology, which, as Osler states, in the half-century between 1850 and 1900, did "more to emancipate medicine from the routine and thraldom of authority than all the work of all the physicians from the days of Hippocrates to Jenner," and he adds, "we are yet but on the threshold."

"We are yet but on the threshold"—that is the center of this controversy. How little we really know of scarlet fever and pneumonia, of diabetes, sclerosis and the cerebral degenerations, of the forms of nephritis, and of cancer! How urgent is the cry for more light on these and on many other human afflictions! This is the fact that drives the investigator to renewed exertions. The progress of the past few decades has, indeed, been splendid, but in spite of this progress problems of immense importance to the health and the saving of life, not only of men but of the brutes as well, are demanding solution; the greatest hope for the solution of these problems lies in the continued use of animals for experimental purposes—so the situation presents itself to those engaged in the struggle with disease. Shall men suffer and die to save the lives of the experimental animals, or shall the experimental animals die to mitigate pain and wide calamity among men? That is the question.

The opponents of medical investigation speak for the animals, the investigators speak for man. Which lives are the more important? The question hardly needs answering. The mere thought of sacrificing human life for the life of a dog or cat is monstrous. It is a grotesque reversal of the world's values. To make such a sacrifice would be an act of insane folly. Yet in effect that is what the opponents of medical research really advocate.

The kindly motive of the antivivisectionists can not be questioned. Their intent is to diminish pain and suffering. They pity the dumb animals; to save the lives of these creatures they would check medical progress. The kindly motive is no doubt humane. But ignorance, and shortsightedness, and grotesquely distorted perspective render such humanity a real danger to human welfare.

THE NEED FOR EDUCATION.

In an earlier section of this paper I suggested that ignorance and misconceptions regarding the methods and the results of medical research were due, in part, to the failure of the profession to enlighten the public. The medical profession has, indeed, made very little effort to affect the public mind. This is not because people are not ready to be taught. A large part of every community is eager for education regarding the means of maintaining bodily health, the necessities and the methods of public hygiene, the history of the medical sciences, and the requirements for medical progress. The readiness of inquiring minds to consider these subjects is the basis on which the opponents of medical research are working.

Now the facts must be faced that we are living in a democracy, and that in a democracy the most potent force is public opinion. Public opinion is the result of education. At present the education regarding the use of animals for medical progress is almost entirely one-sided. The antivivisectionists are spreading broadcast in some communities hideous tales of cruelty, and are leading people to believe that these horrors are typical of what is daily occurring in laboratories. Pictures are published tending to harrow the heart of any one who has in him a love for animals. Meanwhile, nothing is being done to counteract the falsity of these impressions. That medical investigators are also men with tender sympathies and are sensitive to the infliction of pain, that they approach their work with reverence for the wonderful mysteries that every living body reveals, that with a keen sense of human suffering they are patiently searching for new truth in the spirit of far-seeing humanity—these facts are not made known.

The time is approaching, I believe, for this education to be started. The movement should not be confined to the medical profession, but should be taken up as a duty by every intelligent person who believes that any restraint on medical research is a danger to human welfare. Already, in England, a Research Defence Society has been started with Lord Cromer as its president. The purpose of the society is to make known the facts, the facts as to the use of animals in experiments, and the immense importance of these experiments to the well-being of mankind. These facts the society intends to diffuse among the people by published articles and leaflets, by lectures, and by answers to inquiries. Although the society has existed only a few months, it already has hundreds of members, from all departments of public life, representing every class of educated Englishmen and Englishwomen, and including many who have been actively engaged in preventing cruelty to animals.

Thus somewhat tardily in England, after research and teaching have been hampered by restrictive legislation for more than thirty years, it has seemed wise to appeal to the good sense of the people. In this country we have thus far refrained from open opposition to those who are hostile to animal experimentation. But a campaign of education will become imperative, if the attitude of the public continues to be shaped entirely by those who are opposed to medical research. The experience of England is before us. "In the mother-country our hands are tied by an act which was defined by one of the highest legal authorities as a 'penal' act; and though with us, as with others, difficulties may have awakened activity, our science suffers from the action of the state." These were the words of Sir Michael Foster at the Toronto meeting of the British Medical Association; and at the end of a review of biologic progress during the preceding thirteen years, he sounded this note of warning: "Some there are who would go still farther than the state has gone, though that is far, who would take from us even that which we have, and bid us make bricks wholly without straw. To go back is always a hard thing, and we, in England, can hardly look to any great betterment for at least many years to come. But unless what I have ventured to put before you to-day be a mocking phantasm, unworthy of this great association and this great occasion, England in this respect at least offers an example to be shunned alike by her offspring and her fellows."

Against Medical Inspection of School Children.—According to the *Lancet*, the Devon (England) County Council has brought a hornet's nest about its head by adopting the medical inspection of schools. Here is one of the stinging rebukes received by the head mistress of one of the schools: "Dear Madam, I objects to my child being overorled by a doctor. I clears his blood vessels reglar with brimstone and treacle, and he don't want no more doctrine."

Original Articles

FURTHER RESULTS IN SUPRARENAL TRANSPLANTATION.*

DRS. F. C. BUSCH, T. M. LEONARD AND T. WRIGHT.
BUFFALO, N. Y.

In a former communication[1] one of us reported a series of thirty-two cases in which suprarenal transplantation had been attempted. In this first series, a part of the animal's suprarenal was transplanted to its own kidney. At least one positive functional survival of such a graft was obtained. Partial proof of functionating suprarenal grafts was obtained in several other instances. The indication of successful transplantation, consists in survival of the animal, in the absence of all suprarenal tissue, other than that of the graft, and in the histologic demonstration of a living graft containing medullary cells.

In the present series of thirty cases, transplantations have been made into the thyroids, testes and kidneys of dogs and rabbits, not only in the same animal, but also from one animal to another of the same species. The results of implantation into the testes and thyroids were all negative. Positive results were obtained only in those cases where the kidney was used as the receiving tissue.

DETAILS OF TECHNIC.

The complete experiment of transplantation into the kidney, whether the giving and receiving animal are the same, or the receiving animal is another of the same species, consists of three stages, as follows:

First stage.—One suprarenal gland is removed in its entirety. A sagittal third of this, or of a gland from another animal, is introduced into an opening in the lower pole of the kidney cortex, patterned as nearly as possible after the graft to be implanted. The graft is held in place by means of two or more silk sutures passed over it and through the kidney capsule and cortex, on either side. As a rule, the surface of the graft is brought flush with the kidney surface. By cutting off a thin slice from the lower portion of the graft and from each pole, five raw surfaces are brought into apposition with the fresh surfaces of the kidney wound. Care is taken to prevent the intervention of blood-clot between the surfaces of the graft and the kidney. The kidney is then allowed to drop back into its bed, and the external wound is closed.

Second stage.—A varying period after the first operation, the animal's remaining suprarenal is completely removed. In the absence of accessories or remnants, which may have been overlooked during the first operation, there should be no suprarenal tissue remaining, other than that of the graft. If such is the case and the graft has undergone necrosis, the animal should die of suprarenal insufficiency, unless death occurs earlier through anesthesia, hemorrhage, or shock.

Third stage.—If the animal has survived the second operation for a considerable period, the kidney containing the graft is removed. If other causes of death, such as shock and renal insufficiency can be excluded and death occurs within three or four days, preceded by marked muscular weakness and tremor on exertion, it is probable that the cause of death is suprarenal insufficiency, and that the graft had been functionating. The proof is completed by failing to find suprarenal tissue at autopsy and by the histologic demonstration of an apparently living graft containing remnants of medulla. Additional proof would be the demonstration of blood pressure raising properties of graft extracts.

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* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

*From the Physiological Laboratory, University of Buffalo.

[1] Am. Jour. Physiol., 1906, xv, No. 5.

PROOF OF FUNCTIONING.

Complete proof of functionating graft survival, as outlined above, we have obtained in two cases. In one of these the rabbit's suprarenal was transplanted into its own kidney. Thirty-six days later, the remaining adrenal was removed, and seventy-seven days after the second operation, the kidney containing the graft was removed. The rabbit recovered rapidly from the immediate effects of the operation and seemed quite normal for the first day. The morning of the second day, the animal appeared apathetic; did not move unless disturbed, but showed no pronounced muscular weakness; did not eat. In the afternoon muscular weakness was more pronounced, and there was slight tremor on exertion. When not disturbed there was still slight tremor of the hind quarters and a gentle swaying motion; dullness and apathy were increased. It was found dead, the following morning, stretched out on side, head thrown back. At autopsy the viscera appeared normal. There was no evidence of peritonitis and no suprarenal accessories or stump could be found.

The left kidney, containing the graft, which was removed at the third operation, was adherent to the omentum over the surface of the graft. These omental adhesions were very vascular. After separation of the adhesions, the graft itself was not distinguishable on the surface, but showed on cross section through the kidney as a dark hyperemic mass with a central yellowish core, about two millimeters in diameter and five millimeters in length. Microscopic examination of the graft, which had been fixed in Zenker's fluid, showed this as an oval mass at the bottom of the kidney wound and consisting of cells which stained well with hematoxylin and eosin. Outside of these and extending toward the external surface there was a mass without definite cellular structure, containing many areas of extravasated blood and occasional islands of what appeared to be cells of the suprarenal cortex. The central cells, as well as several small islands separated from the main mass by new formed connective tissue, appeared to be of the suprarenal medulla type. These latter cells also gave a reaction with chrome salts.

The second case (sixty), in which the three stages were completed, consisted in the transplantation of the suprarenal of one rabbit into the kidney of another. The rabbit's remaining suprarenal was removed thirty-six days after the introduction of the graft. The animal made an uneventful recovery. Twenty-nine days later, the kidney, containing the graft, was removed. Death occurred forty-three hours after the third operation, preceded by symptoms similar to those recorded for the first case.

At autopsy no abnormality was found in any of the viscera and there was no evidence of peritonitis. The abdominal vessels were unusually distended, which was likewise the case in the first experiment reported. No accessory adrenals or adrenal stumps were found. The kidney, which contained the graft, was found, at the time of the last operation, to be rather firmly adherent to the left lobe of the liver. The graft was visible at the kidney surface as a yellowish body, about two millimeters wide and four millimeters long; the portion imbedded was about two millimeters in its greatest diameter.

Microscopic examination showed the graft as a wedged-shaped mass of cells walled off from the kidney by new-formed connective tissue, but with very little, if any, inflammatory reaction in the adjoining kidney tissue. The cells of the wedge were large in size and spherical to polyhedral in shape, with relatively small nuclei and much cytoplasm. The nuclei stained well with hematoxylin, and the cytoplasm faintly with eosin. It is difficult to identify them with the cells of the normal gland, but from the fact of their reaction to chrome salts and their size and arrangement it seems probable that they are of the medullary type.

Four rabbits survived the third operation—the removal of the kidney containing the graft. These were killed later, and found to possess accessory suprarenals. In two of these cases, living grafts, containing medullary cells, were found. In the third, the graft was partly necrotic and no medullary cells could be demonstrated. In the fourth, there was hydronephrosis and a partly necrotic graft.

One rabbit met with an accidental death through anesthesia, at the third operation, ninety-four days after the introduction of the graft and fifty-one days after the removal of the other suprarenal. At autopsy, no remaining adrenal stump or accessory bodies could be found. The graft itself was living and contained cells of medullary type. In this case, the transplanted suprarenal was obtained from another rabbit.

Another rabbit died through accident at the second operation, thirty-four days after the introduction of the graft. The graft, although partly necrotic, contained some islands of medullary cells.

In still another rabbit death occurred eighteen days after the removal of the second suprarenal. At autopsy no accessories were found, and the graft was necrotic. In this case the graft must have been still functionating at the time of the second operation, the process of necrosis having been completed eighteen days later, at which time the animal died from suprarenal insufficiency.

The best histologic picture of a graft is shown in an animal which died from some undetermined cause, eight days after the primary operation. In this case the cross section of the graft looks like a section through normal suprarenal, distinctly showing all the zones.

Of the remaining cases of this series, some animals died through accident at the primary operation, and the others from suprarenal insufficiency after the second operation.

SUMMARY.

Including the cases of our first report with those recorded here, we believe that satisfactory evidence of functioning suprarenal graft survival has been given in, at least, three cases. One of these consisted in a transplantation from one animal to another. In several other instances where complete proof could not be obtained, there is a strong probability that grafts were functionating. So far as we know these are the first successful cases of suprarenal transplantation with preservation of function.[2] That the original sympathetic nerve connections of the gland may be severed without apparent disturbance of function has been shown by the successful cases of transplantation.

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[2] Note made on reading proof: Since the reading of this paper, there has come to our notice a report (Haberer; Arch. f. Klin. Chir., lxviii, No. 2, 1908). of suprarenal transplantation into the kidneys of dogs and rabbits. In these experiments, however, a portion of the original blood supply was left undisturbed, and there was continuity of tissue between the intra and extrarenal portion of the gland. No adequate evidence of functional graft survival was given.

The kidney seems to be the best structure for the reception of the grafts. The method of removal of the kidney, with the graft, in the third stage of our experiment, has, we believe, in no instance, been a disturbing factor, since those animals which had accessories survived, with apparently no ill effect, the removal of one kidney.

Whether the graft alone, in any of these cases, would have been sufficient to carry on the suprarenal functions indefinitely, we can not say. The longest period of graft survival which we have recorded is 247 days.

With improved technic and more uniform success in animal experiments, it does not seem unreasonable to attempt suprarenal transplantation as a therapeutic measure in Addison's disease.

In conclusion we wish to thank Dr. James A. King and Dr. W. Ward Plummer for valuable assistance in some of the earlier operations.

DISCUSSION.

Dr. W. M. L. Coplin, Philadelphia: An interesting fact in regard to implantation is the suggestion, which has been accentuated by Dr. Busch's admirable communication, that transplantation in the presence of an adequate, normal suprarenal body, or where suprarenal secretion is sufficient, is followed by hyperplasia of the transplanted suprarenal. A very interesting and highly suggestive phase of this work was brought out two years ago by French workers, during attempts to induce hypernephromata by transplantation of the suprarenals. Some times the graft takes and a tumor results; in other instances no neoplasm is produced, although the transplanted tissue survives; of course, in most cases the graft dies, autolyzes and disappears. When the graft remains and its cells proliferate without evidence of suprarenal intoxication, we at once think of Professor Adami's suggestion that when cells are no longer required to maintain their secretory functions they revert to a more highly manifest hyperplastic and productive activity.

Dr. H. G. Wells, Chicago: In 1900 I performed a small series of experiments with the object of transplanting the suprarenal into the kidney in young guinea-pigs, with the object of seeing if from such misplaced adrenal tissue a hypernephroma might develop, but the results were negative. I never got any tumor formation, and only occasionally evidence of survival of adrenal cells. The results were so negative that they were never published.

Dr. A. J. Carlson, Chicago: Is there any explanation for the fact that the graft takes only in the kidney? Why should it not take in other tissues in the vascular supply?

Dr. W. B. Cannon, Boston: Have grafts been placed in the spleen and other organs? Why not make use of the spleen also in these cases?

Dr. F. C. Busch, Buffalo: The point brought up in regard to hyperplasia is interesting, but one on which I am not competent to speak. In these animals, at the first operation, only one adrenal was removed, a part of this or a similar portion of the gland from another animal, being used for transplantation. The remaining adrenal was sufficient to carry on the function until the second operation, even if the graft was inactive. I have not seen any instance of overgrowth or new growth on the part of the transplanted cells.

It is interesting to note that in those animals in which the graft became necrotic, death occurred soon after the removal of the remaining suprarenal, eight to fourteen hours after the second operation. This was due, I believe, to suprarenal insufficiency, and not to the operative procedure alone. In those subjects surviving the removal of all other adrenal tissue, we have nothing but the graft to account for such survival. After the removal of the graft itself, at the third operation, death occurred later, within two to four days, with progressive symptoms of suprarenal insufficiency. It would seem that there had been some adaptation of the animal to the small amount of functionating suprarenal of the graft.

The questions of Dr. Carlson and Dr. Cannon as to the reason for success of transplantation into the kidney and failure in other organs, I can not answer definitely. We did not attempt transplantation into the spleen, partly because, in the rabbit, the spleen is much too small for the purpose. The kidney was chosen because of its ease of access, its vicinity to the suprarenal, its vascularity, ease of handling and control of hemorrhage, and because of its close developmental relations to the suprarenal. I have no explanation of the failure of transplantation into thyroids and testes. Survival of suprarenal cortex after transplantation into the testis has been recorded.

The difficulties involved in the three stages of the experiment I have not specifically mentioned. One of these has been the close relation between the adrenal and the vena cava or renal vein, or both. In attempting complete removal of the gland there is great danger of fatal hemorrhage from wounding these veins.

THE PRESERVATION OF ANATOMIC DISSECTIONS WITH PERMANENT COLOR OF MUSCLES, VESSELS, NERVES AND ORGANS, BY A NEW METHOD.

A PRELIMINARY NOTE.*

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Since all times, anatomists have tried to preserve dissections with permanent color of muscles, vessels, nerves and organs, but, as far as I know, they have failed in securing permanency of color.

The specimens I have seen in the northern and European museums have all the tissues bleached.

It is not so very important to preserve permanently the actual color of muscles, which varies from one subject to another, but it is essential that there should exist permanently a marked contrast between the fleshy parts of muscles and the tendons, fasciæ, bones and other white tissues, which must remain as white as possible. A dark brown color of the fleshy parts of muscles is satisfactory. The more red the brown is, the better and the prettier.

The specimens should retain their color at least five or six years or else the result would not compensate for the labor and expense. We have specimens with color that are over eight years old. Since the color has kept that long I believe it will keep indefinitely, provided the solutions are changed as soon as they become cloudy.

In my work I have used no newly-discovered chemical. I employ the old arsenic and alcohol, to which I have added carbolic acid, formalin and glycerin. These are the compounds used in colleges all over the world, but it is the combinations and proportions that make all the difference between success and failure.

I started by determining the properties or action of each combination in all the proportions I could think of and letting them go on to do their best or their worst without interfering with them beyond changing the solutions when they became cloudy or discolored. I also experimented to determine the action on color of the lapse of time when the specimens were placed in closed empty jars, without any solution in the jar. Altogether I have seventy jars, representing as many experiments. At the end of a year each specimen was examined critically for color, and it was found that six had turned a good color. All the specimens that lost their color did so within two or three months. A new set of experiments was then undertaken, to determine which of the six methods was the best, cheapest, quickest and simplest. I finally came to the conclusion that the following method was, so far, the best in all respects:

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Lean, male adult subjects should be used. Fat, however small in quantity, makes bad preparations.

2. The subject should be embalmed with the following formula: A. Water, 1¼ gallons; arsenious acid (saturated solution), 1¼ gallons; nitrate of potash, 1 pound; formalin (formaldehyd, 40 per cent.), 6 ounces. B. Alcohol, 16 ounces; carbolic acid, 6 ounces; glycerin, 16 ounces; creosote (beechwood), 2 ounces. The two solutions, B and A, are to be mixed. I tried seven different formulas and used forty subjects before finding this formula, which seldom fails to give a satisfactory color, dark brown, for the muscles. The color may show only a few days after the embalming, but it is seldom that it disappoints. This sometimes happens, though due, I think, to the fact that the chemical composition of the tissues is not the same in all subjects. If, before dissecting, one waits three to six weeks after the embalming, the color is better; but after more than five or six weeks the white tissues often become of a dirty, whitish yellow.

3. The arteries and the veins may now be injected, if desired. This is done with hot tallow, colored with vermilion for the arteries and ultramarine blue for the veins.

4. Now the subject is partitioned off, that is, divided into a number of pieces according to the preparations that it is desired to make.

5. Each piece is placed in a glass jar filled with a solution of 1 ounce of formalin to the gallon of water (F. 1). This is changed as often as it is discolored by the blood.

6. When the specimen has been purged of its blood, it is suspended in an empty glass jar with a lid on, and is left to drain off its superfluous water. This requires ten days, more or less.

7. The dissection is then made. It should be done with the parts in the position in which they will stand when exhibited or used in demonstrating. There should be a separate specimen for each layer. In order not to destroy their situation, direction, course and relations, the structures in one exposed layer should not be raised from their beds.

8. When the dissection is completed, if the muscles present a satisfactory color (dark brown), the specimen should be immersed in a strong formalin solution, after the idea of Kaiserling, using 10 ounces to the gallon (F. 10), and leaving the specimen in for three days. When after the dissection the muscles present an unsatisfactory color, especially if they present a raw appearance in part or in totality, the specimen should be immersed in a weak carbolic solution, 1 ounce to the gallon (C. 1). The solution should be changed as soon as it becomes cloudy and the specimen should remain in the C. 1 until the solution stays clear. This distinction in the use of a strong formalin or of weak carbolic is important, because if the muscles are not truly dark brown, especially if they are of a raw color, the formalin turns them into a brown gray or bronze color that no later treatment will change. C. 1 used in place of F. 10 when the muscles present a satisfactory color, often gives good results. Sometimes the results are better than with F. 10. It is all, I think, according to the chemical composition of the tissues of the various subjects. Usually the muscles pale somewhat or change color, when placed in any one of these solutions, but later on in the process the color returns.

9. When the dissection has ceased to purge it is placed in an empty glass jar with a lid on and is allowed to cure. This curing stage is of great importance, second only to the embalming formula, as it develops or brings out again the color, without darkening the tendons or other white tissues. It also smoothes the surfaces, which may be shreddy and ragged; it sharpens the edges of the muscles, thus giving better definition. It fixes the color so as to keep it from being perceptibly affected when the specimen is put up permanently in a solution of alcohol. Even a weak solution of formalin will not affect it much. This curing stage should last until a satisfactory color is attained, but not less than one month. It sometimes requires two or three months, or more, for the muscles to acquire a satisfactory color (dark brown).

10. The arteries must be painted with a vermilion red and the veins with a cobalt blue. The best material is the moist colors (gouache colors), originally used by Dr. Gwilym Davis. They should be allowed to dry thoroughly before the dissection is placed in the following solution.

11. Finally, the specimen is placed in a glass jar filled with a solution of 20 ounces of alcohol to every gallon of water (A. 20).

12. The solutions should be changed as often as they become slightly cloudy or discolored. This is essential to the permanent beauty. Otherwise the impurities in the cloudy or discolored solutions will settle on the white tissues, stain them and destroy their whiteness and brilliancy.

13. Some specimens are refractory to redeveloping color. If after ten or twelve weeks of curing the color has not become satisfactory, place them in A. 20 notwithstanding. If after six or eight weeks in A. 20 there is still no satisfactory color, put them up again to cure for eight or ten weeks or more. The tendons sometimes become horny, but they usually regain their whiteness after they are re-immersed in A. 20. If even then no satisfactory color has redeveloped, put them up in C. 1 until they do. There is here some risk of the tendons and other white tissues acquiring a red gold tinge. As soon as there is any positive sign to that effect, the specimen should be drained for a few days and then immersed permanently in A. 20. Very often the A. 20 will pale the red gold color of the tendons. Thus may be saved some valuable specimens which have cost much time and labor. If this fails the specimen should be made over again with the hope of securing a more favorable result.

That uniformity of color and results does not invariably follow uniformity of procedures is due, I believe, to the fact that the chemical composition of the tissues varies with the subjects. It must be well understood that these two processes are recommended only in cases of refractory specimens which presented a satisfactory color after the dissection was completed. Those specimens which presented an unsatisfactory color after being dissected will seldom respond. I estimate so far, that 85 or 90 per cent. of the specimens turn out satisfactorily. The remainder are merely good, but not good enough to be placed in a museum. Some specimens have to be done over two or three times before one is obtained that is good and pretty enough to be put in a museum.

The colors in specimens that no chemical or other treatment will improve are gray (dark or light), bronze, brick (uric acid color), coffee and milk (medium or light), and pale pink.

14. The other solutions employed for temporary immersion, instead of C. 1 or F. 10, are alcohol, 20 ounces to the gallon (A. 20).; alcohol and carbolic acid (A. 20, C. 1); alcohol and glycerin (A. 20, G. 10); and glycerin and carbolic acid (G. 10, C. 1). They give fairly good results often enough, but not as often as C. 1 or F. 10, nor as good.

15. When specimens become too dark they should be placed in a solution of 20 ounces of alcohol and 1 ounce of formalin (A. 20, F. 1) to each gallon of water. As soon as they have attained a satisfactory color, remove them and put them back in A. 20.

The great practical value of this new method is to give us the means of building study museums composed only of real dissections placed in large glass jars in spacious rooms, flooded with light, on tables so that students can come right to them and study them. Each structure in each specimen is marked by a number and on an appended card the name of the structure is opposite the number. Thus the students can prepare for the dissecting room; they see the innumerable things they never see in a dissecting room; they are able to review and fix in their minds what they have already dissected themselves; the practitioners can in a few moments relearn much anatomy. Such is the study museum that I am now building for the Medical department of Tulane University in New Orleans. Its full usefulness, however, will be brought out only by allotting on the lecture card one hour three times a week for students to study the preparations and by letting them understand that a quiz on these preparations will be a part of their final examination in anatomy.

The same method gives similar results for pathologic specimens, provided the subjects are embalmed with the foregoing solution before the postmortem examination is made.

However, this solution often affects the color of the stomach and intestines. A weaker one will not do so and will assist materially in preserving the color in making pathologic specimens. It will also delay the decomposition of the body for several days in this New Orleans climate in August, when subjects decompose in a few hours. On making the postmortem of such embalmed subjects the embalming passes unnoticed. The solution is composed as follows: A. Arsenic (saturated solution), one and a half gallons; nitrate of potash, one-half pound; formalin, two ounces. B. Alcohol, sixteen ounces; carbolic acid, four ounces; glycerin, sixteen ounces; creosote, two ounces. The two solutions are to be mixed.

The following is a formula which is best suited for embalming subjects to be used in the dissecting room; A. Water, one and a half gallons; arsenious acid (saturated solution), one gallon; formalin, eight ounces. B. Alcohol, sixteen ounces; carbolic acid, eight ounces; creosote, two ounces; glycerin, sixteen ounces. B. and A. are to be mixed. The arteries are distended with cornstarch colored with crimson anilin, the diffusibility of which is regulated by a solution of tartar emetic.

I have worked out the formula used at Tulane for subjects for operative surgery: A. Arsenious acid (saturated solution), two and a half gallons; nitrate of potash, two pounds; formalin, four ounces. B. Alcohol, sixteen ounces; carbolic acid, eight ounces; creosote, two ounces, glycerin solution. B. is to be mixed with A.

The foregoing is only a preliminary note. I shall proceed with the work for some time. Then I propose to publish another note in which I shall mention the improvements, if any, and in which I shall give numerous technical details useful to those who may wish to engage in such work and build also study museums for their universities.

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DISCUSSION.

Dr. Peter Potter, Butte, Mont.: Over half the value of some of the greatest anatomic work which has ever been done is lost because we have only a written record of the work. For instance, Pirogoff, the Russian surgeon and anatomist, was able to get an unlimited amount of material, and climatic conditions were such that he could do much work which could not be done in a warmer climate. The result of his work is contained in five volumes of text and figures. His method was to freeze the body and cut into sections, but the moment his studies were completed and drawings made, the material was destroyed. If we had that material to-day, preserved as Dr. Souchon would preserve it, together with his text and figures, it would be of incalculable value.

Braune of Leipsic reproduced his drawings in a manner that has never been equaled; still his work is incomplete because his material was destroyed after his book was published. The proper preservation of material would enable us to correct mistakes and complete unfinished work of other observers. Even Braune is said to have made mistakes, but this can not be proved or disproved, because his material can not be replaced, and we have nothing but his record and charts. If the material had been preserved an anatomist could go over the work and correct an error, if there was one, or confirm Braune's observations.

Something should be done in this country along the line suggested by Professor His of Leipsic toward establishing an anatomic and histologic institute which would be a central depository for material, microscopic and macroscopic, anatomic or surgical, which has been the basis for original work of merit. The material could be deposited there, and afterward studied and examined by anatomists and surgeons, or any one capable of doing the work, not only to correct errors, but to complete work which even our foremost men are often unable to finish in a lifetime. There is one institution in this country which, I suppose, is looking toward that end, although I have no authoritative information on the subject. It is my impression that we ought to encourage the Wistar Institute of Philadelphia to take charge of such work and material preserved as is done by Dr. Souchon. If the Wistar Institute is not in a position to take up this work, this Section should be.

Whatever solution is used, it must be a solution that is permanent. Another method of preservation is the use of *formalin. A 50 or 100 per cent. solution of formaldehyd is the* best for preserving specimens, but it does not retain the original color. If we can get a solution that will preserve the specimen as well as formalin does, and retain the color of the tissues as Dr. Souchon's method does, we shall have an ideal preserving method.

MY PRESENT POSITION ON APPENDIX QUESTIONS,

AND REFERENCE TO THE DAWN OF THE FOURTH OR PHYSIOLOGIC ERA IN SURGERY.*

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The time has arrived when we may, at least tentatively, classify four separate and distinct kinds of appendicitis: 1, Fibroid degeneration appendicitis; 2, infective appendicitis; 3, congestive appendicitis; 4, appendicitis by external invasion.

FIBROID DEGENERATION APPENDICITIS.

This is an irritative lesion rather than an infective one, and it seems to be the one, on the whole, which takes the largest number of patients to the physician.

It occurs during the course of normal involution of the vermiform appendix. In this process there is replacement of the various structures of the appendix by hyperplastic connective tissue. Nerve filaments persist for a longer time than most other structures in the appendix which is undergoing involution changes, and these nerve filaments are irritated by the contracting connective tissue in the same way as other nerve filaments are irritated in contracting connective tissue in other parts of the body—notably in the scars of amputated limbs. The effects of irritation of entrapped nerve filaments in the appendix seem to be of two chief kinds. Irritated sensory nerve filaments give rise to a sensation of discomfort in the appendix region. This is commonly little more than an indefinite feeling of discomfort, but it may amount to actual pain. Patients are apt to press on the abdomen with the hand over the appendix region, or to lean against a chair or table for relief. Irritated sympathetic nerve filaments entrapped in the contracting appendix seem to cause an excitation of the intima ganglia of the bowel wall (Auerbach's plexus and Meissner's plexus), and this leads to derangement of function of the secretory and excretory apparatus of the bowel, causing intractable intestinal dyspepsia.

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According to my experience, fibroid degeneration of the appendix is the commonest single cause for intestinal dyspepsia. This probably does not often merge into infective appendicitis for two reasons: First, the structures involved in infective appendicitis are actually removed through connective tissue replacement; second, the chronic irritation calls out chronic leucocyte protection, so that the patient suffering from fibroid degeneration of the appendix seems to be specially guarded against infective invasions.

Diagnosis of Fibroid Degeneration.—There are five important diagnostic points for recognizing fibroid degeneration appendicitis:

1. Hyperesthesia of the right group of lumbar ganglia, when deep pressure is made at a point about one inch and a half to the right of the navel.
2. Constant presence of gas in the cecum and ascending colon to the hepatic flexure.
3. Intractable intestinal dyspepsia.
4. Persistent discomfort, varying in degree, in the appendix region.
5. An appendix which feels harder than the normal appendix on palpation.

The condition of fibroid degeneration of the appendix causes disturbance for many years, but is seldom noted in patients less than 20 years of age. It belongs to middle and later life. It is well understood by a few diagnosticians, but has been overlooked in most of the patients whom I examine. So little is the condition recognized as yet that surgeons operating in cases diagnosed as chronic appendicitis have sometimes closed the abdomen without removing the "inconsequent appendix" which was found, believing that they had made a mistake in diagnosis. Other surgeons removing such appendices on general principles, but still believing that they had been mistaken in diagnosis have been surprised at the prompt and unaccountable recovery of the patient's health.

Patients do not often go to bed with the irritative lesion of fibroid degeneration of the appendix. They are the patients who go the rounds of the profession asking for definite diagnosis in connection with their appendix symptoms or for their intestinal dyspepsia. Blake has described a series of cases corresponding closely with these cases of fibroid degeneration of the appendix, but he ascribes the symptoms to faulty mesenteric attachment. I believe that his specimens were not subjected to microscopic examination, and that another series of specimens, examined with reference to fibroid degeneration, will be found to contain many belonging to the latter class rather than to the class in which faulty mesenteric attachment leads to mucous inclusion or to vascular derangements.

Treatment of Fibroid Degeneration.—My position relative to operation in these cases of fibroid degeneration is to advise against it when the patient is first seen. He is asked to follow medical treatment under the care of his physician. Many of the patients, relieved of their fears of appendicitis, become so well that they need little further attention. Other patients will return at the end of a few months and ask to have the fibroid degenerating appendix removed.

On account of my interest in the subject, some of my assistants at the hospital, for the sake of brevity, got to calling these cases "cases of Morris' appendix." The nomenclature is not allowable for two reasons. Senn described them in a general way as cases of "appendicitis obliterans," and Ribbert referred to the condition as "normal involution of the appendix" before I took up the study and noted the presence of persistent nerve filaments and observed the occurrence of hyperesthesia of the right group of lumbar ganglia as a diagnostic point. If for the sake of brevity it is desirable to call cases of fibroid degeneration of the appendix by the name of any observer, they should be called Senn or Ribbert appendices.

Another reason why the nomenclature of "Morris' appendix" is undesirable is because the appellation has gone wrong in some quarters and now stands for the perfectly normal appendix. This began apparently in a spirit of humor, but by *reductio ad absurdum* on the part of serious men it led to the conclusion that I favored removal of the normal appendix. As a matter of fact, I have always opposed the idea of removal of the normal appendix, even when it appears incidentally in the course of some other operation. My reason for this is that the field about the normal appendix is unprotected by leucocytosis, and the opening of ever so small a part of the intestinal lumen in an unprotected field calls for a great degree of skill.

A type of appendix which may be confused with the fibroid degeneration appendix is the fibrous scarred appendix remaining after infective invasion. The history of acute infective invasion, and the destruction of nerve filaments along with other structures in such an appendix will commonly serve for making the distinction.

INFECTIVE APPENDICITIS.

At present infective appendicitis is the most conspicuous ailment of the appendix, even though numerically the cases seem to take second place. My position in regard to causation of this type of appendicitis has not changed since the publication of my book on the subject in 1895. This work is now out of date on many other points. I believe the common, acute, infective appendicitis to be due to anything which causes the inner soft coats of the appendix to swell to the point of strangulation within the tight outer sheath. It matters not whether this swelling is caused by the presence of a concretion, the extension of an ordinary colitis, a blow or a twist from the psoas muscle, or any one of a number of disturbances.

As soon as the lymphoid, mucous and submucous coats have swollen within the tight sheath of muscularis and peritoneum they become anemic (compression anemia). An isolated anemic area of this sort should be instantly attacked by bacteria, for the reason that it has momentarily lost its leucocyte protection, and because the bowel bacteria of the lumen of the appendix are right at hand to begin invasion into such an anemic area. The infective process is brought to a halt in one of three ways: 1, By sufficient determination of phagocytes to the point, through blood vessels not disabled entirely; 2, by sufficient determination of phagocytes to the point of blood vessels in neighboring structures which have become adherent to the infected appendix; 3, by surgical removal of the appendix.

WHEN TO OPERATE.

It is evident that without surgical operation the infective invasion is confined only by the limitations set by the autoprotective factors of the individual patient. By this we mean his ability to manufacture opsonins and phagocytes, and to get them to the field of action through unobstructed blood channels. On the basis of this belief I still hold to the dictum, stated many years ago and which aroused considerable antagonism, to the effect that in acute progressing infective appendicitis operation must be performed as soon as the diagnosis is made. The reason for this is that the bacteria are performing an operation on the appendix, and operation by the surgeon is merely a transfer of authority. We can never know in advance what limitations to infective invasion are to be set by the patient, but we do know what many surgeons are able to accomplish, for their statistics are available.

My position toward cases that are first seen when an acute attack is evidently subsiding depends on judgment in individual cases and can not be stated as a dictum. Sometimes it is best to operate, in order to shorten the period of convalescence and to avoid the danger of recrudescence of infective invasion. Sometimes it is best to wait for entire subsidence of infection and to choose the interval stage as the time of operation. The advantages of waiting for the interval are not so great as commonly supposed. The reason is that in the interval between attacks we lose the benefit of the local hyperleucocytosis that has been called out by the infection, and the patient has to get up a new local leucocytosis for the surgeon when he finally operates.

My position toward operating in the interval depends entirely on the case. Many patients have had the appendix wholly destroyed in a violent acute attack and never need an operation subsequently unless for separation of troublesome adhesions. Other patients carry chronic infection and mucous inclusions after the subsidence of an acute attack, and these patients call for operation as soon as a convenient time can be arranged. I have had many patients get into trouble because they set the convenient time too far away, and they had to have a hurried operation at a most inconvenient time. It is not difficult, by palpation and by observance of the subjective symptoms, to classify interval cases pretty accurately, so that we know which patients need operation and which do not.

The Incision, and Treatment of the Stump.—Concerning the choice of incision for interval cases of appendicitis, I still hold to the McBurney or gridiron incision. The results are so ideal that I do not dare to change to other types that have been advocated by other operators. The skin incision need not often be more than an inch and a half in length, no matter how extensive the adhesions, and the split muscles fall together so readily that hernia is avoided. A pair of scissors and a needle are about the only instruments that are required in any sort of appendix operation. My position toward treatment of the stump in interval cases has changed several times. I have employed nearly all the methods that have been advocated. Since the publication of Seelig's convincing article on the subject in the *Annals of Surgery*, about three years ago, I have put aside fears and now ligate the stump simply like an artery, dropping it back into the peritoneal cavity after touching it with carbolic acid and neutralizing the carbolic acid with alcohol, which latter should be washed away with a little saline solution to avoid all irritation. This simple treatment of the stump suffices because the stump falls against parietal peritoneum, which walls it in quite as securely as does peritoneum infolded from the cecum. The adhesion to parietal peritoneum is at a point where the cecum is naturally fixed, so no harm results. By dropping fanciful methods of treating the stump we can save from one to five minutes of time, and this will allow the entire operation to be completed without hurry in less than ten minutes in most interval cases.

Cases with Gangrene or Perforation.—My position has changed greatly in regard to treatment of appendicitis cases with gangrene, perforation and products of infection outside the confines of the appendix. Twenty years ago I worked deliberately, made long incisions, and sometimes multiple incisions, for thorough wiping and flushing of the peritoneum. Gauze drains, gauze packing and other sorts of drainage apparatus were employed. Hydrogen dioxid was used for rapidly throwing out products of infection. I then tried to introduce refinements, in the way of more speedy work. Multiple incisions were discarded and the single incision was made shorter and shorter, until now for most cases of extensive infection I use about the same incision as for interval cases. Wiping and flushing the peritoneum, and the use of gauze drains and gauze packing were gradually dropped, as fast as I could feel that I was on safe ground.

After the publication of Dr. John G. Clark's notable paper in the *American Journal of Obstetrics* relative to complete closure of the abdominal cavity without drainage, in pyosalpinx cases, I tried for about a year, in appendicitis cases with pus and peritonitis, the method of flushing the peritoneal cavity with saline solution and then closing without drainage. Primary union was obtained in many cases. None of the patients died and none had increase of peritonitis. Secondary abscess appeared just often enough to make the method undesirable, and I now use a short wick drain and only one. In patients with thick, fat or strong muscular abdominal walls I sometimes exchange the gutta percha covering of the wick drain for sheet lead, which is benign in the tissues and which maintains a free opening through heavy walls.

In these cases of appendicitis with pus and peritonitis I have not changed from the idea of breaking up adhesions sufficiently to allow of finding multiple pus pockets, as well as for turning out the appendix; but I avoid separation of the entire mass of adhesions, because they immediately reform, and sometimes in undesirable positions. I have little objection to spreading pus on normal peritoneum which gets into the field, or of leaving such peritoneum covered with pus, as the patient's autoprotective factors care for it promptly. In former years I damaged these patients very much in attempting to do various kinds of "ideal work" with the stump, but for some years now I have particularly avoided efforts at bringing the cecum to the surface in cases in which it would cost the patient too much. The appendix is ligated simply at the bottom of the well, or in the worst type of cases it is not even ligated. A pair of forceps is snapped over the base of the appendix and left *in situ* until the following day.

The appendix in these cases can often be pulled away with the fingers, and in some cases in which it is seen to be black and gangrenous it is not even necessary to do this, as it will melt away and run out in a day or two. It is only in the desperate class of cases, however, that one will need to leave a gangrenous appendix—the class of cases in which it is best to complete the entire operation in three or four minutes. In cases of appendicitis with pus and peritonitis it is best to complete the operation in from five to fifteen minutes as a rule. This not only conserves the patient's natural resistance, but it means a short period of intoxication with the anesthetic. Little attempt is made at protecting the normal peritoneum against pus in the course of the operation, and very often pus is still welling freely from the wound when the absorbent outer dressing is applied and the operation completed. The wound is not sutured closely, and sometimes is allowed to remain without any sutures. In these cases the advantages of the gridiron incision are supreme, as the walls fall together so nicely that hernia is almost confined to fleshy patients. In several hundred appendicitis cases since adopting the gridiron incision there are but four hernias, so far as I know—three in fleshy patients and one in a case of omental grafting for a sloughed cecum.

It was my preconceived notion that fecal fistulas would occur rather frequently after the sort of treatment that has been adopted for the stump in these cases of appendicitis with pus and peritonitis, but it seldom appears, and when it does it closes spontaneously without attention in a few days. One can keep a fecal fistula going interminably by applying "ideal treatment" of washing it out, inserting drains, and employing antiseptics which are injurious to the delicate granulation tissue. If the fistula is neglected properly, the undisturbed granulation tissue will be quickly replaced by connective tissue and the connective tissue will contract and close the opening.

After-Treatment. — In the after-treatment of these cases of appendicitis with widespread infection I have not dared to try different postural methods which are known to be valuable, as my results have been so satisfactory with the old recumbent position. The Ochsner starvation treatment I have adopted and applied with great satisfaction, except that I prefer to do a three-minute operation promptly in the class of cases in which Ochsner would not operate until later. Murphy's method of slow instillation of saline solution into the rectum I had applied in principle with the Quimby bag for some time before Murphy described the method and presented the profession with a perfected apparatus for its application.

The refinements offered by quick work, short period of anesthesia, as little surgery as possible, avoidance of flushing, wiping, packing and the use of extensive drainage apparatus, meet with such response on the part of patients that no surgeon accustomed to the classical régime could fail to note the advantages of the methods which I have chosen. Patients so dazed by infection that they do not recognize the surgeon at the time of his examination may often be found reading the newspaper in bed the day after the operation.

SCIENTIFIC NEGLECT.

The treatment which is advocated in this paper may almost be classified as a treatment of neglect. Our highly developed art was not satisfactory when applied to cases of appendicitis with pus and peritonitis. There was a lack of harmony between art and appendicitis. For example, in 1904 Dr. L. W. Hotchkiss[1] published a report from one of the hospitals with which he was connected, showing that from 1895 to 1898 the operative mortality rate in cases of appendicitis with peritonitis was 30 per cent. In 1899 Dr. Hotchkiss changed from the accepted methods of the day and turned to methods which conserved the natural resistance of the patient. He did not have a single death in his next seventy-two cases, although they were of the same class as those which had given 30 per cent. death rate under conventional art, and in which 30 per cent. death rate is common over the whole world to-day. In the year when Dr. Hotchkiss changed his methods, Chauvel[2] made a report on the treatment of appendicitis in the French army for three years. There were 171 cases; 83 were treated medically and 88 surgically. Medical treatment had a mortality of 4 per cent. among those treated before the fourth day, 37.8 per cent. among those treated from the fourth to the eleventh day, and over 50 per cent, for those whose affection was not recognized and treated until after the eleventh day. Surgical treatment had a mortality of 42 per cent. among those operated on in the first five days, and 30 per cent. in operations from the fifth to the tenth day. France represents the highest kind of art, and I therefore make this quotation from that country, although nearly all the European countries showed equally disastrous results from attempting to apply the art of the day to the particularly trying class of cases of appendicitis with pus and peritonitis. It has resulted in turning our faces toward a new era in surgery in general.

Twelve years ago, when I reported on a series of 100 consecutive unselected appendicitis operations, with a death rate of 2 per cent., Dr. Keen publicly protested at Denver against the acceptance of such a report, and Dr. Savidge wrote to the *Medical Record*, saying that it must mean selection of cases for report. Since that time so many other surgeons have presented still better statistics that to-day I may perhaps present for purposes of illustrating the theory a report on my last 100 appendicitis operations at the Post-Graduate Hospital, dating from the last patient out of bed on May 1. There were forty-one cases of appendicitis in all stages of acute attack, with no deaths. There were fifty-nine cases of chronic appendicitis of various sorts, with one death. This death was due to ileus caused by faulty readhesion. There are no hernias in the series so far as I know. No patient was refused operation.

CONGESTIVE APPENDICITIS.

Congestive appendicitis occurs with loose kidney and in various conditions causing general obstruction to the lymph and blood circulation of the abdominal viscera. In these cases the swelling develops slowly. There is time for adaptation of the tissues of the tight outer coats to the swelling tissues of the soft inner coats, and the result is very different from that in which rapid swelling leads to compression anemia. There seems to be no further result than a rather tense and tender appendix, which is amply protected, and which does not have a tendency to go over into the infective appendicitis class, so far as my observation counts.

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[1] Med. News, July 2, 1904.
[2] Bull. de l'Acad. de Méd., January, 1899.

APPENDICITIS BY EXTERNAL INVASION.

A fourth separate class of appendicitis cases may perhaps be made up from those in which the infection approaches from without. Tuberculosis of the peritoneum, and various infections from the oviduct, frequently involve the appendix incidentally, attacking the outer coats first. The inner coats swell, and may even undergo destruction, but the process is so slow that we do not look for the mishaps accompanying rapid swelling of the inner coats to the point of compression anemia. The gradual approach of infection from without calls out protective factors which take charge of the field and seem to prevent the occurrence of infective appendicitis, as that term is commonly understood.

THE FOURTH, OR PHYSIOLOGIC, ERA IN SURGERY.

It seems to me that the object lesson of the results of conserving the patient's natural resistance, in cases of appendicitis with peritonitis, has opened the vista of a new epoch in surgery.

In the days of Hippocrates surgery was heroic. That represents the first era. Then came Andreas Vesalius and the anatomists, and we had the second or anatomic era in surgery. Pasteur and Lister introduced the third, or pathologic, era. The pathologic era is the one now prevailing the world over. The dominant idea is to prevent the development of bacteria in wounds and to remove the products of infection by means of our art.

Appendicitis has been so refractory in response to the perfection of the art of the pathologic era that when the rubber glove appeared, representing the last degree of refinement of the art, it seemed to have overset the whole system. The use of the rubber glove necessitates comparatively slow work, the employment of long incisions and work by sight. Geologists tell us that the constant accumulation of snow and ice at the antarctic pole may cause a sudden changing of the axis of rotation of the earth. The rubber glove was the last snowstorm of the pathologic era of surgery, and the sun is now to shine on what is perhaps the most fertile area ever exposed to light.

Our faces are now turned toward Metchnikoff and Wright, with their descriptions of phagocytes and opsonins, and of the natural protective forces of the patient. We are at the dawn of the fourth, or physiologic, era in surgery. We are to conserve the natural resistance of the patient and to turn him over to his phagocytes and opsonins as helpfully as we can. We are to leave the patient in his best condition for manufacturing phagocytes and opsonins, through the shortest possible method of anesthesia and the least degree of surgery which will suffice to turn the tide of battle between bacterium and leucocyte.

That is the new principle—turning the tide of battle only and leaving the patient with his physiology as nearly intact as possible. The first object lesson in support of the new idea was perhaps furnished by the physician who did not believe in operations for appendicitis, and whose patients sometimes recovered, even though they had pus in the peritoneal cavity. These cases required explanation, and we now have the explanation. The patient attended to the bacteria and to the products of infection. Our surgery of the pathologic era had a tendency to damage the patient to such an extent that he could not destroy his own bacteria and products of infection. The object lesson furnished by the patients of the physicians who did not believe in operating for appendicitis, and the object lesson furnished by the results of operations which neglect the details of the art of the pathologic era, are lessons sufficient for a basis of the coming art of the physiologic era in surgery.

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DISCUSSION.

Dr. A. J. Ochsner, Chicago: At the present time there is no longer any difference of opinion regarding the treatment of patients suffering from appendicitis belonging to three of the four forms described by Dr. Morris, thanks largely to the splendid work done by Morris, Murphy and many other members of the American Medical Association.

The class in regard to which there is still a difference is limited to cases of severe acute appendicitis complicated with peritonitis; cases in which the infection has extended beyond the tissues of the appendix, coming under treatment two days or more after the beginning of the attack.

Eight years ago I published the following conclusions after testing them carefully for a period of eight years. This form of treatment has been used by myself and many others in thousands of cases belonging to this class with the result of reducing the mortality in this most fatal form of appendicitis to less than 2 per cent. by changing an extremely dangerous acute into a comparatively safe interval condition:

1. Patients suffering from chronic recurrent appendicitis should be operated on during the interval.

2. Patients suffering from acute appendicitis should be operated on as soon as the diagnosis is made, provided they come under treatment while the infectious material is still confined to the appendix, if a competent surgeon is available.

3. Aside from insuring a low mortality, this will prevent all serious complications.

4. In all cases of acute appendicitis, without regard to the treatment contemplated, the administration of food and cathartics by mouth should be absolutely prohibited and large enemata should never be given.

5. In case of nausea or vomiting, or gaseous distention of the abdomen, gastric lavage should be employed.

6. In cases coming under treatment after the infection has extended beyond the tissues of the appendix, especially in the presence of incipient diffuse peritonitis, Conclusions 4 and 5 should always be employed until the patient's condition makes operative interference safe.

7. In case no operation is performed neither nourishment nor cathartics should be given by mouth until the patient has been free from pain and otherwise normal for at least four days. The same practice should be followed after operation.

During the beginning of this treatment not even water should be given by mouth, the thirst being quenched by rinsing the mouth with cold water and by the use of small enemata. Later small sips of very hot water frequently repeated may be given, and still later small sips of cold water. There is danger in giving water too freely, and great danger in the use of large enemata.

9. All practitioners of medicine and surgery, as well as the general public, should be impressed with the importance of prohibiting the use of cathartics and food by mouth, as well as the use of large enemata, in cases of acute appendicitis.

10. It should be constantly borne in mind that even the slightest amount of liquid food of any kind given by mouth may give rise to dangerous peristalsis.

11. The most convenient form of rectal feeding consists in the use of one ounce of one of the various concentrated liquid

predigested foods in the market, dissolved in three ounces of warm normal salt solution, introduced slowly through a soft catheter, inserted into the rectum a distance of two or three inches.

12. This form of treatment can not supplant the operative treatment of acute appendicitis, but it can and should be used to reduce the mortality by changing the class of cases in which the mortality is greatest into another class in which the mortality is very small after operation. This applies particularly to severe acute perforative or gangrenous appendicitis more than thirty-six or forty-eight hours after the beginning of the acute attack.

To Conclusion 8 we now regularly add the excellent method introduced by Dr. Murphy of administering a continuous enema of normal salt solution with an apparatus which permits the flow of only a drop at a time so that it will require at least one hour to introduce 1,000 c.c.

The plan is simply this: In acute appendicitis neither food nor cathartics of any kind whatsoever should be given by mouth nor large enemata except by the drop method and operation should be performed only when the patient has attained a condition in which the surgeon can reasonably expect a favorable result, judging from his personal observation in previous similar cases.

Dr. Alexander Hugh Ferguson, Chicago: In my opinion, it is a dangerous thing to teach that the incision must be a very small one. What is a small incision for one surgeon is not, for physical reasons, a small one for another surgeon. What is a proper-sized incision for the deliverance of the appendix in the hands of one man is dangerous in the hands of another. The incision, therefore, must be of the length necessary to delivery of an infected appendix without rupturing or tearing it.

I can not get over the idea of holding off operation in infected cases. Dealing first with the infected mass is, in my judgment, necessary and must be done with the greatest amount of care. I can not restrain myself from doing something for every case of appendicitis that presents itself to me, irrespective of the number of days it has existed. We can not judge by hours or days of the pathologic condition. In the apparently moribund patients, say between the third and fourth day of the disease or later, I feel like doing something more than washing out the stomach and rectum. I think that at that very stage, when we know that there is pus in that region, demonstrated by the signs and symptoms manifested by the patient, a minimum amount of surgery under local anesthesia should be practiced. Make a very small incision and drain. In other words, create a line of least resistance outward. I believe, however, that many patients have been lost because of the surgeon doing a major operation at that very dangerous time. How many of these patients now die when left to medical treatment alone is a pertinent question.

Dr. D. N. Eisendrath, Chicago: There is one feature of this subject that I wish discussed more fully. It is one which interests particularly the surgeon who is obliged to operate in cases of general peritonitis which the medical man has tried in vain for two or three days to treat by palliative measures. Many of these patients are brought to the surgeon when the abdomen is enormously distended on account of septic paralysis of the intestine, when the pulse is 130 to 160 and the patient is thoroughly septic. The time to bring the patient to the surgeon is in the first twenty-four or forty-eight hours, before there is much toxemia or a great degree of infection. We have learned to leave these advanced cases alone and try to tide the patient over the attack. We elevate the head of the bed, place the patient on starvation treatment and wait until such time as the appendix can be taken out safely in the interval.

During the past nine years Drs. McArthur, Greensfelder and myself have treated thirty-four patients with general peritonitis, and of these we have been able to save 21, or 60 per cent. This includes not only cases brought in during the first day or two of the attack, but on the fourth or fifth day. My own personal statistics based on work done during the past three years are that I have been able to save eleven out of twelve patients. This has been accomplished by following the dicta Dr. Murphy laid down so clearly: by a rapid technic and leaving good drainage in the wound. Of much importance is the after-treatment. We must learn to leave these patients alone and not meddle too much in the after-treatment. Patients should not be filled up with fluid by mouth. We lost two patients, one my twelfth case, through giving large quantities of fluid by mouth. The result was an acute dilatation of the stomach, and all efforts to give relief failed.

Other points of importance are the use of the continuous salt solution by the drop enema method, first advocated in this country by Dr. Murphy, and the use of the Fowler position. One should be constantly on the watch to detect secondary abscess between the coils of intestine or a subphrenic abscess.

Dr. Carl Beck, New York: If this country had done nothing else than to elucidate this obscure question, it would have done enough for the whole world. Germany, recognizing what America has done, accepts American views. Two years ago a discussion on this subject was held in Berlin before the local medical society. I was invited to take part and was very much pleased to see in use the methods advocated in this country, but the Germans forgot that it was this great country which brought out these ideas. I congratulated the members of the society that they had become so much Americanized, and I am the only American who ever said so to the members of the Berlin Medical Society.

Regarding the care of the appendix, from my own surgical experience, I can say that anything necrotic serves as a place for bacteria to settle.

Dr. William L. Rodman, Philadelphia: One hesitates in entering on a discussion of appendicitis in Chicago, because so much or, I almost said, nearly all the good work in this particular line is being done in Chicago in the last few years. In 1901 I saw a great deal of work done by Dr. Ochsner. It was a revelation to me, and when I heard his epoch-making Chairman's address at St. Paul a little later I returned to Philadelphia determined to put into practice the safe, sound and sane doctrine which I had heard. I was severely criticised in several hospitals for pursuing what I believed from Ochsner's teachings to be a masterly inactivity in cases in which I had been tempted to operate before. It was with some trepidation that I looked for a good result in several instances, knowing that I would be criticised for not operating in such cases the moment I saw them, but I have never yet felt that I regretted following Ochsner's teachings. I believe that he has done more to straighten out this knotty question of when to operate than any one else who has ever lived.

As for the way to operate and the details of operative procedures and technic, of course, Murphy has swept the floor clean; he has left nothing for anybody else to say. I believe that all of us are getting results in operations for appendicitis today that would not have been possible but for the teaching of these men, because they have looked far ahead of their time and they have been the cause of saving thousands and thousands of lives by discouraging premature, foolhardy operations. As to the technic in operations, I believe in ligation of the stump, provided it is covered with the subperitoneal coat, and at the same time the meso-appendix is brought up and placed as a cap over the appendix so as to prevent any possible infection of the cavity. It is a safer procedure than the mere purse-string method.

Dr. J. H. Stealy, Freeport, Ill.: I fear that two points mentioned will be misunderstood. 1. Leucocytosis does not amount to much in appendicitis. In the first stage it is very important, but many times I have found a leucocytosis of 8,000 or 9,000 and at the operation I found an ounce or two of pus in an abscess cavity. Drainage is valuable in such cases, as in many others, but the secret of drainage, in my opinion, is to know how to handle the drainage after it is once put there. I have operated on a number of patients throughout the country who were left for the practitioners to look after. If there was not much discharge at the end of the second or third day, the practitioners have removed the drainage. As a result, Nature's protecting wall has been torn up, permitting extension of infection, and within twenty-four hours there was a general peritonitis and the patient died.

Dr. C. C. Roger, Chicago: In cases of fibrous appendicitis, when the nerves of the appendix are caught in the fibrous tissue, causing almost constant pain—a condition I have described as neuroma of the appendix—if there is no improvement under medical treatment, the appendix should be removed. What is found on entering the abdominal cavity is simply a hard, white cord, which looks as though its removal were almost useless, but the patient will be cured if it is taken off.

I admit that a leucocyte count does not amount to much. Some of my worst cases of gangrene of the appendix had only 5,000 leucocytes. That is not the rule, however; usually in such cases there is a high leucocyte count. If the patient is overcome with toxins, the leucocytes are low. Make a differential count and if you find over 80 per cent. of polynuclear cells operate; if there are 5,000 leucocytes with 98 per cent. of polymorphonuclears the case is an operative one: death is imminent and you must operate at once. The leucocyte count, then, is not of much value, but the differential count is of great value. The incision should be short. The appendix can be removed through an incision sufficiently large to introduce the index finger, provided the appendix is not bound down. The incision should be made wherever the appendix is. McBurney's point means nothing, because the appendix may be any place in the abdominal cavity. The point is to make the incision so you can get at the appendix. The time to operate is at sight in the majority of cases. To wait forty-eight hours is nonsense. Suppurative cases should always be drained, but too much drainage is bad and too little is just as bad. The drain is useless if it is removed inside of twenty-four hours. Leave it in place until it becomes slimy and the exudates push it loose (forty-eight to seventy-two hours). The drainage can be removed at the proper time without danger to the patient.

Dr. H. J. Burwash, Chicago: In the postoperative treatment of those cases of diffuse suppurative appendicitis in which there is a liability to obstruction of the bowel I have used with success enemata of oxygen gas. This is introduced early and before marked signs of obstruction present themselves. The gas is allowed to run slowly into the bowel for five or six minutes hourly. It has the immediate effect of neutralizing noxious gases in the intestinal canal, the therapeutic effects of oxygen on the general circulation, and the mechanical effect of preventing adhesions and hence obstructing by keeping the bowels inflated. This does not, I imagine, exclude the treatment advocated by Dr. Murphy.

Dr. H. A. Royster, Raleigh, N. C.: The general practitioner, with whom I come in daily contact, would like to understand two things about the so-called Ochsner treatment. The first is that any treatment intended to tide the patient over a dangerous period does not mean that operation must be abandoned, but that the patient is being prepared for operation. I believe that the Ochsner treatment is the greatest single advance in the treatment of appendicitis, but it is also the most misunderstood method in America to-day. I am sure that nearly every practitioner thinks it is a substitute for operation and not a preparation for it. In other words, if he begins the treatment of a case of appendicitis according to the Ochsner method, he will keep it up, no matter what happens, and, when the patient gets over the attack, rejoices in a cure without operation. If the patient dies, it was God's will.

The second point is whether pus is ever absorbed in the abdominal cavity without killing the patient. I have never understood exactly the teaching on that question. This matter must come up in the minds of the general practitioner, especially when he has a patient with a ruptured appendix, pus in the peritoneum, and the case goes along without operation under the so-called Ochsner treatment. I think that it is the duty of those who see the general practitioners when they bring these cases to let them understand that Dr. Ochsner, as well as every other good surgeon, believes always in operating early for appendicitis, but never when it is unsafe.

Dr. Charles E. Thomson, Scranton, Pa.: I am sure that Dr. Ochsner would blush for his treatment if he knew how it was being carried out in the country districts. What does it mean to the general country practitioner? It means: Do not operate in appendicitis, and it means nothing else. Many of those practitioners have always been opposed to surgery, and now they assert that a great surgeon in Chicago is saving nearly all his cases by not operating on them. I admire Dr. Ochsner, but I think that his theory and principles have been misunderstood, and have thus been the cause of filling many untimely graves. I believe that with the Murphy treatment we can save practically all those neglected cases to which Dr. Ochsner applies his treatment, and that the sooner the nonoperative and time-limit theories be eliminated in the treatment of appendicitis the better.

Dr. John B. Murphy, Chicago: It is approximately two years since this subject came before the American medical profession for discussion. We have agreed on the diagnosis, the time to operate and the limitations of this procedure. Limitations are essential to ultimate success. One must do the least thing, give the least trauma and finish in the least possible time consistent with doing the thing well.

Dr. Ochsner brought out, probably before any one else, the recognition of the time when it was dangerous to do work in the peritoneal cavity, because the patient had been neglected in the beginning and allowed to get to a position in which he was loaded to the maximum of his vital resistance by intoxication and infection. A painful mortality has brought recognition of the fact that there are cases in which a little additional work means a fatal termination; that trauma in the peritoneum is one of the most dangerous types of trauma. I am convinced that it is not yet safe to let the order go out that the simple ligation of the appendix, without any further protection of the stump, is ample. I feel that we should give an additional protection to that stump other than mere ligation in the acute infected cases. These are the cases in which we are most likely to have leakage when we simply tie the stump and cut it off. In the intermediate cases, in which I have no infiltration, no reaction to inflammation at the time, I treat it by clamping, by tying a ligature in the crease, and then by taking an overstitch so that there is no raw or abraded surface at that point to become adherent, and it will not become adherent. In the active cases I ligate and then put in a drain.

Appendicitis in pregnancy has a colossal mortality, something like 60 per cent. mortality to the mother and about 90 per cent. mortality to the child. I have been endeavoring to estimate the best time to act. In all the cases that come under my observation, in which the patient has had attacks of appendicitis, I insist on an operation before there is another attack and at the earliest time after impregnation. I think that that will give us the best results.

As to the management of peritonitis, we have up to this date had forty-three cases of perforation of the appendix into the free peritoneal cavity with general diffuse, spreading peritonitis. Among these forty-three cases we had forty-one recoveries. One patient died of pneumonia six days afterward and another died of intestinal obstruction under my own eyes four days afterward with gangrene of six inches of bowel. In the cases with recovery there was much creamy pus around the abscess. This creamy pus, Nature's means of defence, is loaded with scavenger leucocytes; it is producing a circumscribed inflammation of the peritoneum. That means resistance. In the other varieties of peritonitis and perforation not associated with appendicitis, we have had all together nine cases, making a total of fifty-two cases. Five of these were diffuse with perforation and recovery.

There is pus and pus. Dr. Morris does not mean that the pus of the appendix that has ruptured into the free peritoneal cavity could be cared for without interference, because then we would not need any operations. He means that pus of the staphylococcus, the colon bacillus, or the streptococcus type—and these are the three principal types of pus in the peritoneal cavity— does not, without the element of tension, produce a fatal absorption in any place in the body. He means that the defensive forces of the body are not fully appreciated.

The elements of treatment consist of, 1, closing the opening; 2, relieving the pus tension by putting in a drain; 3, getting out of the peritoneal cavity and leaving in the drain to prevent subsequent tension—no flushing, no washing, no sponging, no trauma. In following out that line of treatment we have not overburdened the patient at the time of the operation with the additional absorption of the products of infection; we have not killed him on the operating table, and these results gained in an experience of five and a half years shows what we can hope for in this disease. Salines are used in all our severer operations of every kind, whether abdominal or not.

Dr. Robert T. Morris, *New York:* I adopt the Ochsner starvation treatment in principle, but prefer to do a three to five minute operation on a patient when I can; then leave him to his opsonins and phagocytes. The Ochsner treatment is one of the greatest points ever made in the history of appendicitis. The Ochsner treatment as comprehended by the average physician of New York is damnable. We are now arriving at the era of physiologic surgery, of leaving something for the patient's phagocytes and opsonins to do. If we leave this factory of the patient's in good condition, it can go on manufacturing these substances and cure him.

As to simple ligation, what is the difference whether the stump of the appendix lies against the parietal peritoneum or against the visceral peritoneum, the peritoneum of the mesoappendix, which is drawn up over it, or the peritoneum brought up on the stump by the infolding suture? In all these cases the stump lies against the peritoneum, and that is the essential thing if it is promptly walled in by a plastic exudate. We save time by the simple ligation, and time is the thing we must keep in mind in connection with this new principle, the new era in surgery. Dr. Ferguson is still afraid of pus in the peritoneal cavity. If we use gauze to wall off that area we are doing too much surgery. If we fill the patient with gauze, we are performing taxidermy on him. If we break down the adhesions, what will be the influence if we let a pint of pus into the free peritoneal cavity? That is an albuminous fluid, and it will furnish nourishment to the patient. You may kill him if you try to get it out. Let him get it out. He can do it better than we can. In cases of general peritonitis I believe in the three to five minute operation together with the Ochsner treatment. In the last 100 cases at the Post-Graduate Hospital, 100 consecutive cases of appendicitis, unselected, treated by the method of leaving the patient to his own opsonins and phagocytes, 41 acute cases of appendicitis and 59 interval and other cases, there was only one death. I might have presented other series of cases, but this one will suffice. I have operated on every appendicitis patient with peritonitis who was still breathing when I got to him.

Treves Commends Panama Sanitation.—Sir Frederick Treves, speaking on "Preventive Medicine at Panama," before the Royal Society of Medicine (Proceedings, June, 1908, p. 313), said: "I visited the Isthmus in February of last year and had the advantage of seeing this remarkable work under the guidance of Colonel Gorgas, the chief sanitary officer. To Colonel Gorgas is due the credit of an undertaking which in its aims and its results is not one whit less astonishing than the work of connecting by means of a canal the two great oceans of the world. Colonel Gorgas is clearing of disease one of the most pestilential spots in the tropics, and is making of the same a place where men can live in safety and in reasonable health. He is at the same time demonstrating practically the soundness and efficiency of the most recent claims of preventive medicine. . . . It will be seen, I hope, from the above brief description that the Isthmus of Panama provides at this moment an object lesson which those who control the destinies of men might study with advantage. It provides for the realization of a long contemplated and heroic ideal—the medical officer of health with a free hand."

PROMINENT SYMPTOMS IN THE DIAGNOSIS OF GASTRIC AND DUODENAL ULCERS.*

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The accurate differentiation between duodenal ulcers and ulcers of the pyloric end of the stomach offers great difficulties. When a physician follows his patients from the examining room to the operating table he is forced to the conclusion that to locate a peptic ulcer is not only difficult but often impossible.

In reviewing the symptoms and diagnostic features of peptic ulcer I shall take the duodenal as the type. What holds good for duodenal ulcers, holds equally good for all ulcers situated in the pyloric end of the stomach. The chief difference arises from the degree in which the characteristic symptoms are manifest.

In this discussion I wish to emphasize but four points that seem to stand out prominently and clearly in the larger number of cases: First, the periodicity of attacks of gastric and duodenal ulcers. Second, the number of years through which these attacks and intermissions or remissions have run before surgical relief has been advised, or perhaps accepted. Third, the characteristics of pain, its great diagnostic significance and its place in differential diagnosis. Fourth, the ready control of all symptoms during the period of attack by the measures that control pain—as food, alkalies, irrigation, and vomiting.

PERIODICITY.

The periodicity of attacks is so constant and striking a feature of ulcer of the stomach and duodenum that one can not but have in mind this lesion when the patient complains of repeated attacks, each covering days, with an intermission of normal health of varying time. The onset of symptoms is often initiated without discoverable cause, appearing suddenly and continuing without interruption for days, weeks, or even months, each day a repetition of the former, each meal producing about the same effect; first, ease—later followed by the usual syndrome of pain, or burning distress, gas, sour eructations and vomiting of sour mouthfuls of varying quantities, all these being at their worst from two to five hours after a meal.

Following this period of attack comes an intermission of days, weeks, or months, appearing, often, as unaccountably and as suddenly as did the distressing symptoms. These attacks recur at irregular intervals for years and continue for varying periods, increasing in intensity perhaps but slowly, the intermission shortening, until finally, the patient may fail to reach at any time that complete ease of previous years. Early in the period of disturbance and often for years, the interval is one of perfect health and, after the symptoms have disappeared, the patient soon reaches his normal condition. Yet again, it may be only a partial remission; the patient never quite attains normal, or his "good days" may be only days of moderate ease. The appetite is usually good until complications have changed the character of the symptoms, at which time it becomes necessary to examine carefully into the early history in order to arrive at a logical diagnosis.

These periods of complaint with the periods of intermission, each covering days or months, are so characteristic, that, excluding other details, this one feature is often sufficient to warrant a probable diagnosis.

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

However, periodicity is not of itself peculiar to ulcers of the stomach and duodenum. The character of the attack must be considered carefully. Gallstone and appendiceal colics recur irregularly, often increase in severity as attacks multiply, may, and often do appear suddenly and without known cause. All three have one feature in common; each attack is but a part of the usual round of trouble, and the intermission is but a part of the cycle. In the latter case no more than in the former may this quiescent period be regarded as that of cure.

LENGTH OF TIME THE SYMPTOMS HAVE PERSISTED.

Scarcely less prominent than the periodicity of attacks is the number of years the illness has been manifest before surgical relief has been advised, or perhaps should be advised in many cases, for at first most of these cases are medical and the conservative surgeon does not lay bold hands on them.

However, as one's experience lengthens he is inclined to the belief that error is much oftener to be laid at the door of conservative surgery than at the door of aggressive surgery, and for this reason the sufferer too often fails to get that ready and early relief which is secured only through surgery. In a series of 258 duodenal cases, there are but few with histories of duration of less than one year, and in these the symptoms were clear and often urgent. Usually the history shows that the disease has run from 5 to 20 years and not infrequently to 30 and 45, the average being just short of 12 1/2 years. Considering the facts of the long series of years with distressing symptoms always promising increase, and as years go by, with invalidism increasing, marked or complete, it seems strange, not that so many patients are urged to seek surgical relief, but rather why surgical measures are not advised sooner, or at least as soon as complications appear which indicate that the medical border line has been passed.

In the series here mentioned, this history of repetition of attacks with intermissions or remissions, together with long years (average 12 1/2 years) of trouble has been clear cut in about 90 per cent. of the cases. This should quiet the most conservative internist who feels that surgery is too "freely and flippantly" advised.

SIGNIFICANCE OF PAIN.

Pain in gastric ulcer is the most constant symptom and perhaps the most characteristic in its manifestations. Not the kind of pain, not the location of the pain, but the time of the pain is the distinguishing feature. It varies from mild distress to that of great intensity, and, unless complications have introduced great modifications, its appearance, control and disappearance, are almost if not quite the final evidence required for a correct diagnosis. The pain appears sometime after meals; oftener it is as nearly exact to say before meals. Usually in from two to five hours after a hearty meal the burning, gnawing feeling begins, increasing in intensity until vomiting or irrigation has removed the acid-offending material. Food eases the pain, the heartier the meal the longer the relief. Especially is this true in the history of duodenal ulcer. Gradually, however, this relief lessens, until late in the history and after the patient has been long a "surgical case," food eases but little. When complications (perforations, adhesions, obstruction) are far advanced, food gives no ease and distress follows its ingestion. At this stage relief comes only after ridding the stomach of all offending material by irrigation or forced vomiting.

The pain comes, then, in definite periods of attack; comes daily, or two or three times a day, during this period; comes from two to five hours after meals and is therefore premeal as often as it is after-meal in time. It is epigastric, radiating seldom to other areas, and, except in the later stages is relieved in part, at least, by food, drink, alkalies, vomiting and irrigation. The kind of pain depends on the pathologic condition. It may be burning, gnawing, lancinating, boring—cutting (apple-core sensation) or the felling pain of perforation

Locating an ulcer of the peptic tract from the area of pain as given by the patient is perplexing and often very uncertain. Most of the pain is epigastric, let the lesion be where it may, but the lower the lesion, the oftener is the sensation of pain to the right of the median line, and some ulcers, especially the duodenal variety, give characteristic findings. The longer food gives comfort, other things being equal (as duration of time of disease, extent of trouble, obstruction, etc.) the farther down is the ulcer situated, so that in duodenal ulcer, especially in the early days of its history, food gives relief for a longer time than when the ulcer is located higher, i. e. in the stomach proper. Following this period of ease, the characteristic ulcer symptoms return, of gnawing, boring even to extreme pain, with gas, sour eructation, vomiting of various amounts and intensity, dependent on obstruction and extent of lesion.

There is, however, a pain of the cardia comparable to the boring of a bared apple core, very distressing, foreboding and sickening which may be present when the lesion is purely pyloric or duodenal, and is doubtless present at times when acidity is high but purely a functional disorder or due to dietetic error. This pain is brought about by reverse gastric peristalsis, acidity, ulcer, then spasm of the pylorus followed by reverse peristalsis. If the sufferer belches or vomits with difficulty the annoyance amounts to real pain, and fear of cancer is prominent. These pains come in wave periods of a few moments, and relief follows suddenly and completely at each wave if gas and sour eructation be copiously raised, or the pain gradually recedes to almost quiet, if belching, eructation or vomiting is impossible. These wave pains repeat until the stomach is relieved by measures that empty it, or they yield readily to sufficient alkalies.

It is seen, therefore, that difficulties arise, and that the most careful attempts at ulcer location fail, but until obstruction is advanced or the lesions large, the best evidence for ulcer localization is the length of time that food gives relief.

Most of the ulcers of the stomach and duodenum (and this is true independent of location) have a longer or shorter spell of relief from food, until late in the disease, at which time the early history is necessary both for diagnosis and localization of ulcer.

There are to-day clinicians who persist in the idea that if ulcer of the stomach is present, food gives immediate pain, or at any rate, no sense of comfort even for a short time. This is not true in the great majority of peptic ulcers, let the lesion be where it may.

The great number of ulcers are in the pyloric end, and in this region the symptoms are usually typical until complications arise. We then have to consider the conditions that alter the character of the pain. They are: First, large areas (saddle ulcers); second, ulcers well toward the cardia; third, cases in which obstruction is advanced; fourth, hour-glass stomach; fifth, perforation; sixth, adhesions to the gall bladder or other organs when these adhesions cause obstruction, immobility, or deformity. In many of the above conditions the patient rarely has any perfect relief, and if there is a brief period of relief it is so soon followed by greatly exaggerated distress that the interval of ease is lost to most of them.

CONTROL OF SYMPTOMS.

All symptoms are usually controlled by the measures directed toward pain. When pain is at its highest, so also is gas, eructation and vomiting. By removing, neutralizing or engaging the acid in the process of digestion, the pain stops, gas no longer forms, vomiting and eructation cease and the patient enters a period of calm, to return to his former distress sometime later. The degree of discomfort depends on the extent of the lesion, the kind of food taken and the care in its mastication. Until complications (obstruction, perforation, adhesions) have advanced, the pain and other symptoms seem chiefly due to increased acidity and spasm. Reverse gastric peristalsis adds to the discomfort. Later, when complications enter for consideration, the real symptoms are obscured, and the physician is often obliged to grope in the dark for an exact diagnosis, unless the patient has a judicial mind and can relate accurately his earlier symptoms.

Again, the course of ulcer, like cancer, may be long latent, and be diagnosed only when some threatening symptom like perforation, suddenly prostrates the patient. If the perforation is not complete, or if only a small amount of septic material escapes, the pain may be of short duration, but intensely sharp and lancinating, simulating so closely gallstone colic that such diagnosis is the only logical one to make. If the perforation is free and the fluid septic or large in amount, the pain is much more intense than in gallstone colic. There is exceeding great shock, much morphin is required to control the symptoms, and early the appendiceal region will be the center of the pain. Later, if the patient survives, the pain will creep to the duodenum and gall-bladder area. Under such conditions one should think of perforating ulcer rather than gallstones or appendicitis.

When, therefore, there are attacks of stomach trouble that run in continuous periods of days or months, with intermissions of days, weeks, or months with more or less freedom from symptoms, these periods recurring and occurring over years of time gradually deepening, the symptoms bearing close relation to food and being controlled or modified greatly by dietetic measures, food, drink and alkalies, we may justly look for ulcer of the stomach or duodenum in a large number of cases.

Purely functional hyperacidity may give symptoms difficult or impossible to differentiate from early ulcer. Appendicitis and more often cholecystitis may run a train of symptoms that will mislead the most painstaking clinician, but these cases are as purely surgical as are typical ulcer cases. Comprehensive surgery finds the source of the trouble and relief is the result. If a mistake is made it should be that of diagnosis only.

DISCUSSION.

Dr. William J. Mayo, Rochester, Minn.: Acute ulcer is not of itself a surgical condition. It is only when such complications as perforation, hemorrhage, or obstruction occur that the physician should call the surgeon. In regard to chronic ulcerations, while the improvement between the attacks, which may last for days, weeks, months and even sometimes for years, is not by any means complete, it is sufficient to give the internist a wrong idea in regard to the cure of the patient, just as in the early days of appendicitis or gallstone disease. The surgeon considers chronic ulcers only those ulcers with thick callus which can be demonstrated to the bystander within a distance of six or eight feet from the operating table. As a result of operations it has been shown that chronic ulcers are more frequent in the duodenum than in the stomach, and that at least two patients out of three operated on are males. I do not believe that a large percentage of these patients with chronic ulceration will recover permanently under medical treatment. The preoperative stage depends largely on the length of time the patients are able to get along on a reduced selected diet; but among the laboring people one must face the conditions as they exist. The patient must not be cared for medically too long and made to live on insufficient food and ill-prepared food, such as his situation in life affords. Such a patient is disabled when living on a restricted diet, and can be restored to his full capacity for work only by enabling him to live on what he is able to pay for, and to do this operation is often necessary. In 187 resections for cancer of the stomach 54 per cent. of the cancers originated in ulcers. This does not mean, however, that most ulcers undergo cancerous degeneration. Cases with a long history of ulceration more often result in obstruction on the development of cancer than primary malignant disease of the same stage, and it is this early obstruction and not the cancer itself which sends the patient to the surgeon. Chronic ulcer existing over a period of years is, however, a grave menace to the patient because of the possibility of malignant disease grafting on ulcer base. Many people suffer severely from symptoms that may point to ulcer for which they have received no relief; these patients pass from one physician to another, to quacks and "patent-medicine" vendors. In a number of such cases one-half will be non-surgical and can be placed in three groups, namely, cases of atonic dilatation, cases of prolapse of the stomach and cases of gastric neurosis. In examining cases of atonic dilatation on the operating table one finds no obstruction and the wall of the stomach is quite flaccid. Apparently it has not sufficient power to push on the food. Atonic dilatations are not often benefited by surgery. In cases of prolapse of the stomach the *x*-ray plates look like works of art when bismuth is used to map the organ out. Such a prolapsed stomach, however, empties itself quickly; there are no mechanical conditions actually present. I do not know the definition of gastric neurosis. Some of those cases called neurotic years ago have since been relieved of gallstones, appendicitis, etc., and in the future more will be relieved. This "I do not know" group is a large one. The picture is that of a patient with gas, changing secretions, dyspepsia, indigestion, and the stomach will be found thin-walled, dilated, and the duodenum and pylorus dilated as well. It is said that many of these cases are due to pressure of the superior mesenteric vessels on the third portion of the duodenum; but this has not been found true on exploration; as a rule the jejunum and transverse colon are also dilated. At any rate they should not be subjected to operation. In the above series, one-half of all the stomach cases that come to us can be placed.

The remaining one-half of apparently serious gastric diseases belong to the surgeon. One-fifth are cases of gastric cancer; the internist has no business with them. One-fifth are cases of chronic ulcer, and the majority of these belong to the surgeon. Two-fifths are made up of a peculiar and most interesting group of cases in which ulcer has been suspected, but could not be demonstrated on exploration. Gastroenterostomy has occasionally been done and found to be harmful. Later these patients have been found to be suffering from gallstones or an inflamed appendix, tuberculosis or tumor of the intestines, etc., giving rise to the stomach trouble. The embryology of the intestinal tract explains this; the maintenance of the body is a primitive function which existed before the development of the nervous system. The cerebrospinal system does not control the primitive function, which is still cared for by the internal secretions, etc., which cared for it before the nervous system developed. The acid in the pyloric end of the stomach controls the output from the stomach. The acidity in the duodenum is the more powerful and controls the opening and closing of the pylorus. The stomach in the storage end is a later evolution and a convenience, enabling its possessor to place rapidly a quantity of food into this receptacle for the slower process of digestion, but its control is vested in the parts to be convenienced lying beyond the pylorus, which have the work to do, all derivatives of the midgut. Therefore the control of the pyloric apparatus lies not in the stomach itself, not in the cerebrospinal system, but in the intestinal tract lying beyond the pylorus and between it and the splenic flexure of the colon, which marks the beginning of the primitive hindgut. Therefore, gallstone disease, appendicitis, tumor and disease of the intestinal tract cause closure of the pylorus, and symptoms referable to the stomach arise which in our ignorance we have hitherto treated as diseases of the stomach. The cases comprised in the remaining fifth are surgical, but not fully worked out.

DR. FENTON B. TURCK, Chicago: In carrying out experimental research on dogs I have found it necessary to see the opened abdomen and the evidences of ulcer in order that I might know that the feces used in investigation were actually from an ulcer case. Therefore, the observations of the findings, in connection with the symptoms in these cases, have given me some idea of the existing relations and I have not yet found that the clinical symptomatology of the patient helps a great deal in diagnosis. I have seen a great many cases of ulcer of the stomach without any symptoms of pain whatsoever; I have seen cases of hypoacidity and cases of total absence of hydrochloric acid (achylia gastrica). Likewise in experimental animals with induced ulcer more frequently no evidence of pain can be elicited by pressure and there is frequently no increase of acid in the stomach—often a greatly diminished amount. In the patient the feces many times show no evidence of hemorrhage, no occult blood. These conditions I have found paralleled in the dog.

The general or systemic condition of the patient permitting ulceration to take place has not been presented sufficiently. I think that the emphasis placed on a local condition does not represent the true pathology of ulcer. Ulcer of the stomach is not found in those countries where the inhabitants eat rice. It is evidently a meat-eater's disease; the zone of ulcer is in the meat-eater's zone. Ulcer is not found among the natives of China, Japan or India, except in the seaports, which the foreigners have brought into the meat-eater's zone. Certain observations which I made with extract of meat and the colon bacillus to determine the etiology of ulcer were tabulated over a period of ten years. The attempts made on the local mucosa to produce ulcer were negative, while those made in the feeding experiments were positive. I was able to induce numerous ulcers in the duodenum at a point just beyond the pyloric region, and also in the stomach, with perforation and chronic ulceration. The question is, How does the ulcer become chronic? In the production of the acute ulcer I found the autolysis to be continuous and at times anaphylaxis, with no round-cell infiltration (chemotaxis); but in the making of the chronic form, by carefully adjusting the feeding experiments so as to bring about an alternate mild anaphylaxis and chemotaxis, I produced a condition resulting in the chronic ulcer.

DR. J. M. ALLEN, Liberty, Mo.: Seventy-two cases of ulcer of the duodenum are on record. In 1886 an article appeared in the *Kansas City Medical Journal*, in which were reported 86 cases of ulceration of the duodenum and one case of ulcer of the stomach. It is fair to assume that ulcerations in the duodenum can be controlled better than ulcerations in the stomach. By starvation the function of the duodenum can be arrested, but this will not arrest the function of the stomach. Besides, ulcers in the stomach do not come from the same source as ulcers in the duodenum. Ulcers of the stomach depend on an embolus or thrombus of the gastric artery or on an arteriosclerosis; whereas ulcers of the duodenum originate in the results of the passage of acrid, irritating substances through the stomach. Anemia is a predisposing cause of peptic ulcer; so are exanthemata, or anything that causes an acute inflammation of the duodenum. Again, there exists a condition of acute inflammation of the duodenum which passes into the chronic form in which the inflammation passes to the duodenum through the common duct.

I believe that it is a mistake to recommend operation as soon as ulcer of the stomach is diagnosed. In ulcers of the duodenum up to the point that evidences of obstruction from the formation of new tissue or induration occurred, I do not recommend operation unless there is vomiting, especially vomiting of blood. If regurgitation from the stomach is present, then one can say that the ulceration is from one to one and a half inch from the stomach; if beyond this point, evidences will be found in the stools. Blood found in this way points directly to the necessity for operation without delay. So one can reach some conclusion regarding operation. The symptomatology of ulcer of the stomach and duodenum is quite clear. In 1872 investigations were made and a paper written in 1886 was based on clinical histories. A feature connected with this is of great importance, namely, the progressive emaciation always present, the cause of which is the failure to digest the elements necessary for fat and growth—the fats, carbohydrates and sugars. Pain begins two or three hours after the taking of food when the stomach begins to force the food out of it. I think that the duodenum is the great center, the brain as it were, of the abdominal cavity and is associated with a great many reflexes.

DR. BERTRAM W. SIPPY, Chicago: There is an apparent disparity in the statistics of Robitanski, Mayo, Moynihan and others, in regard to the relative frequency of ulcer of the duodenum. I believe that the disparity can be explained thus: Duodenal ulcer is relatively more severe than gastric. The danger of perforation and hemorrhage is greater and the symptoms are more striking and more severe; as a result these cases appear before the surgeon more frequently than do the cases of gastric ulcer, which heals under treatment, or under no treatment. The cases reported by these men include those described as fresh ulcers. It is possible that ulcers in the duodenum might be overlooked; but it is not necessary to assume that all are overlooked. The disparity between the statistics of the surgeons to-day is attributable to the fact that the duodenum is more in the domain of surgery than is the stomach.

In a given case the following should be considered: Is an ulcer present? What complications are present? Is it possible that there is malignant disease at the pylorus? Is there obstruction at the pylorus? Are there perigastric adhesions? Is the pylorus open? Is the gastric secretion present? Is the motility of the stomach interfered with? All these points should be determined in a given case. Then the possible location of the ulcer should be made out. An old ulcer would be indurated. After a careful analysis one should be able to make a diagnosis of the presence or absence of an ulcer and, if any complications exist, whether or not surgical treatment should be instituted. Surgery should be invoked when perforation is present, when a carcinoma is engrafted on the seat of an ulcer, or when medical means have failed to cure. When the motility of the stomach is disturbed by perigastric adhesions or by the hour-glass constriction, one must resort to operation; in certain cases of hemorrhage also. In 15 per cent. of the cases death occurs during the first hemorrhage. In 35 per cent. death occurs within twenty-four to thirty-six hours. Some patients could be saved by surgical interference. I advise against waiting.

DR. ELLIOTT P. JOSLIN, Boston: Dr. E. A. Codman recently published a paper in the Boston Medical and Surgical Journal, in which the possibility of the root of the mesentery pressing on the duodenum was discussed and considered as an etiologic factor in the production of gastric and duodenal ulcer. Dr. Codman's evidence was obtained by injections in the cadaver, observations at operation and clinical studies. In animals the mesentery hangs vertically, so that there is no obstruction, but in human beings in the erect position the mesentery hangs along the spine and thus could easily compress the duodenum where it crosses it. Statistics on sex and age in gastric ulcer, I believe, should be modified. It is commonly considered that gastric ulcer occurs more frequently in women than in men, and particularly of women of the chlorotic type. During the past few years chlorosis has become a rather rare condition. Coincident with the diminution in cases of chlorosis it is a question whether there will not be a simultaneous disappearance in the disparity of the preponderance of gastric ulcer in the female sex.

Dr. G. W. McCaskey, Fort Wayne, Ind.: The point brought out by Dr. Graham as to the extreme chronicity of the disease should be recognized. I have seen in consultation a very severe case of hemorrhage which proved to come from a gastric ulcer, and in getting the history the fact was brought out that the first attack had occurred twenty-five years ago. During this interval of twenty-five years there had occurred six, eight or ten attacks. Another patient seen seven or eight years ago had a distinct palpable tumor, and the question arose whether it was a cancer or a central ulcer. The diagnosis was made of an ulcer. The patient is alive and well to-day. I am inclined to believe that we should attach some value to the time of the appearance of pain in making a differential diagnosis between gastric and duodenal ulcer. When food passes from the stomach into the duodenum, then pain was supposed to occur in cases of duodenal ulcer, and I attach much diagnostic importance to this point.

Dr. Mayo, in his discussion of acute gastric ulcer, spoke of hemorrhage as being an indication for surgical interference. I understand that surgical interference in cases of acute hemorrhage is a most hopeless proposition. The great difficulty is to find the bleeding point. The best treatment, in my opinion, would be rest, and not surgical interference. Carcinomatous degeneration of the ulcer, cancer, might attack these indurated ulcers and they should be excised whenever possible. Gastroenterostomy should not be done in these cases.

We should consider chronic ulcer of the stomach as serious as acute ulcer. A certain amount of healing takes place after the occurrence of the indurated scar tissue which is so characteristic of some of the cases. Nothing short of excision will cure them.

Dr. Judson Daland, Philadelphia: In chronic ulcer, the one requiring surgical interference, we are often deceived by an apparent recovery—an important point for the internist to consider. A few months ago I had a patient under my observation who presented symptoms of ulcer, but he apparently recovered. In spite of the fact that no symptoms existed, an operation was performed and an indurated ulcer found. There are many such cases of latent ulcer that call for surgical interference. I recall another patient who died from an initial hemorrhage. This case was looked after by a skilled specialist who thought the patient was cured of his ulcer, as there were but few dyspeptic symptoms. The patient was on his way around the world when he was suddenly taken with a hemorrhage and death quickly followed. At autopsy a gastric ulcer was found. The point that I wish to emphasize is that there are many cases of chronic gastric ulcer diagnosed as acute ulcer, the symptoms appearing for a brief time only, but the ulcer remaining for years.

Dr. M. Milton Portis, Chicago: The dangers of gastroenterostomy are so great that I believe that one should hesitate a long time before advising such an operation. Two years ago I published a paper in the Annals of Surgery, in which I had collected both the medical and surgical results following a gastroenterostomy. I had been stimulated to do this because of a few cases that fell under my observation. There is no doubt at all that serious dangers follow gastroenterostomy. Jejunal ulcers occur and severe diarrheas which lead to death. There are many other disturbances. Pawlow's and Starling's work throws much light on the disturbances noted. But the strictest indications must be present before one should resort to surgical interference. In case a medical man did not want to attend the case alone, let him call in the surgeon in consultation and thus reduce the danger.

Dr. Christopher Graham, Rochester, Minn.: In differentiating between gastric and duodenal ulcer a good point is that in duodenal ulcer the food gives relief for a longer time. The degree of acidity, rather than the length of time the symptoms have been manifest, determines the severity of attack. The higher the acidity, other things equal, the greater the pain and the shorter the period of food relief.

CLINICAL OBSERVATIONS ON ABSOLUTELY IRREGULAR HEARTS.*

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The recent advances in our knowledge of the cardiac irregularities have enabled us to define their character and trace their inter-relationship with far more exactness than was ever possible before. The absolutely irregular heart,[1] in which all semblance to regularity has ceased to exist, is clinically the most important of the cardiac arrhythmias. It is less common, indeed, than are respiratory irregularities or extrasystoles; but it represents a far more serious condition, and James Mackenzie estimates that over 50 per cent. of all serious insufficiencies are associated with this irregularity. It is very important, therefore, that we should become acquainted with its characteristics, its clinical significance, and its relationships.

The distinguishing characteristics of the absolutely irregular heart will be discussed under three headings: (1) Absence of normal auricular contractions; (2) the irregularity itself, and (3) its permanency.

ABSENCE OF NORMAL AURICULAR CONTRACTIONS.

This is by far the most important characteristic of the absolutely irregular heart and one that denotes a fundamental change in the heart's activities. Our clinical evidences of auricular contractions, according to Mackenzie,[2] consist of (a) an auricular wave in the apex tracing just preceding the ventricular wave, (b) an auricular wave on the jugular and liver pulsations, and (c) the presystolic accentuation of the murmur of mitral or tricuspid stenosis. To these might be added (d) the presence of an auricular wave on the cardiogram obtained from within the esophagus,[3] and (e) the auricular wave on the electrocardiogram.[4] By none of these methods of examination has it been possible to demonstrate that the auricles contract before the ventricles in absolutely irregular hearts. Mackenzie was the first to insist on this fundamental fact. It is probably to be interpreted as a total auricular paralysis or at least as an auricular asthenia of such a grade that the contractions of this chamber are no longer demonstrable.[5]

The Venous Pulse in Absolute Irregularity.—In the normal tracing taken over the jugular vein the so-called

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

[1] This irregularity has been variously designated as the ventricular rhythm, nodal rhythm, rhythm of auricular paralysis, rhythm of the first Stannius ligature, perpetually irregular rhythm, etc.

[2] Mackenzie, J.: Abnormal Inception of the Cardiac Rhythm, Quar. Jour. of Med., i, 39.

[3] Young and Hewlett: The Normal Pulsations within the Esophagus, Jour. of Med Research, xvi, 427.

[4] Kraus and Nicolai: Ueber das Elektrocardiogramm unter normalen und pathologischen Verhältnissen, Berl. klin. Wchnschr., 1907, 811.

[5] Hewlett: The Interpretation of the Positive Venous Pulse, Jour. of Med. Research, xvii, 119.

c wave, which corresponds in time with the carotid pulse, is preceded by an *a* wave due to the contraction of the auricle (Fig. 1). In similar tracings taken from patients with absolute irregularity the *a* wave is absent and the tracing rises abruptly without any preceding auricular wave (Fig. 2). It is now generally conceded that the first wave on such abnormal tracings, though corresponding in time with the carotid pulse, is not due to a transmitted arterial pulse, but is sent back into the vein from the heart.

I believe that this *p* wave[6] is due to the beginning of ventricular contraction. It can be demonstrated in tracings taken directly over the normally acting auricle, either internally from the esophagus[3] or externally when the bony chest wall is deficient.[7] In normal jugular tracings this wave is greatly diminished or absent because it is taken up by the diastole of the auricle; but when the auricular systole is absent, it is transmitted back through the filled auricle and becomes a marked feature of the venous pulse.

Mackenzie believes that this wave is due to a contraction of the auricle simultaneous with that of the ventricle. It seems to me, however, that such an interpretation is unnecessary. When the auricle is known to contract simultaneously with the ventricle, as is the case in certain extrasystoles, the succeeding *v* wave is taken up by the dilating auricle and is diminished in size.[5]

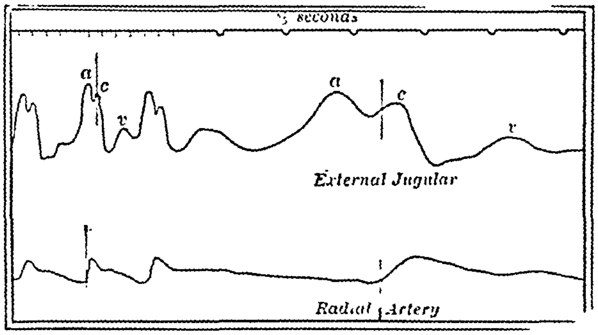

Fig. 1.—Normal venous pulse, showing the *a* wave preceding the *c* wave.

Such is not the case in absolute irregularity; but, on the contrary, the *v* wave is nearly always of unusual height. For this reason, especially, I believe that we are dealing here with a condition in which the auricle is motionless, or at least so nearly so that it does not affect the venous pulse.

A fourth venous wave, which occurs normally in late diastole, has been described by Hirschfelder, Gibson and others. A similar wave is occasionally very pronounced in cases of absolute irregularity. In some instances it seems to precede the next ventricular systole, and it might there be mistaken for an auricular wave. But, as a rule, it bears a constant time relation to the preceding ventricular systole so that it may be said to follow that rather than precede the next contraction.

Mitral Stenosis Murmurs in Absolute Irregularity.—Mackenzie has called attention to the remarkable change that takes place in the murmur of mitral stenosis when the heart assumes an absolutely irregular rhythm. The characteristic presystolic accentuation heard ordinarily is caused by the contraction of the auricle which increases the rate of blood flow through the constricted mitral orifice just previous to ventricular systole. When such a patient develops an absolutely irregular rhythm the mitral stenosis murmur may disappear entirely. If it persists it loses its presystolic accentuation. For the past two years I have paid particular attention to mitral stenosis murmurs in patients with absolute irregularity, and I have never heard a presystolic accentuation under these circumstances. The change from the normal was particularly striking in the case of a patient who suffered from mitral stenosis with short paroxysms of irregularity. Ordinarily her heart was perfectly regular, and at such times her venous pulse was of the normal type (Fig. 3) and the murmur typically presystolic. From time to time, however, she suffered from short paroxysms of complete irregularity (Fig 4), during which her murmur lost its presystolic accentuation and her venous pulse became of the type ordinarily met with in absolute permanent irregularity (Fig. 5).

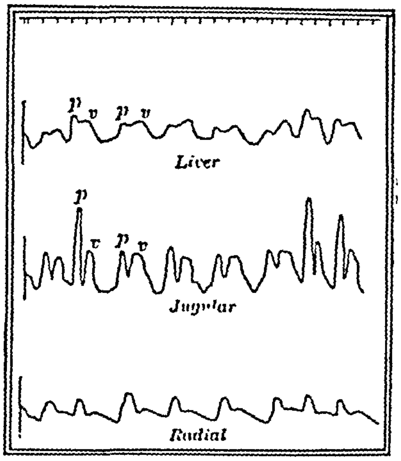

Fig. 2.—Venous and liver pulses of absolute irregularity, showing the absence of auricular waves.

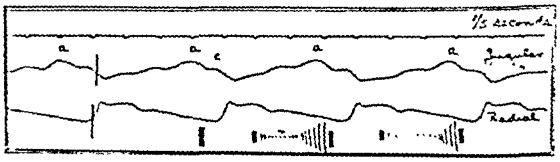

Fig. 3.—Normal type of venous pulse observed between the paroxysms of irregularity. The shading indicates the intensity of the mitral stenosis murmur. Figure reduced one-half.

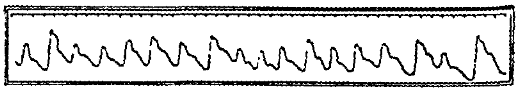

Fig. 4.—Radial tracing during the paroxysm of irregularity. Figure reduced one-half.

The absence of the presystolic accentuation of the murmur of mitral stenosis during absolute irregularity is a matter of decided diagnostic importance. Physicians should recognize the fact that a typical murmur at such a time is not to be expected. I could cite several case histories in which a mistake might have been avoided had this fact been kept in mind. In such patients the murmur, if present, is often heard throughout diastole. Frequently it has an early diastolic accentuation owing to the more rapid flow of blood through the narrowed orifice during the earlier and more rapid part of ventricular dilatation.

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[6] Mackenzie's a′ wave. A similar wave on the normal venous pulse has been called the *s* wave by Bard, the *k* wave by H. E. Hering, and the *b* wave by Piersol.

[7] Erlanger: Cardiograms Obtained from a Case of Operative Defect in the Chest Wall, Johns Hopkins Hosp. Bull., xvi, 394.

CHARACTER OF THE IRREGULARITY.

In typical cases of absolute irregularity the heart action is totally devoid of any semblance to regularity, a so-called delirium cordis. No two waves are of the same duration: rapid beats are followed by longer ones, and these in turn by a bewildering succession of pulse waves of varying duration and intensity. On auscultation over the heart the rhythm is often even more confused, for many of the shorter systoles produce no palpable radial pulses nor even second aortic sounds. Frequently we remark on the discrepancy between the number of heart beats and of pulse beats. The term delirium cordis expresses the extreme lack of rhythm. In other patients, however, the heart is comparatively slow, especially after compensation has been somewhat restored. I have seen it fifty-five per minute. The pulse is then fairly regular and every heart beat reaches the wrist. It may even, as in one of my cases, be perfectly regular for a time, though showing an absence of the *a* wave on the jugular pulse. Under these circumstances, however, the regularity is only transient and any light strain leads to a more or less definite delirium.

PERMANENCY.

The absolutely irregular rhythm is one of the most persistent arrhythmias. When once well established, it usually continues uninterruptedly until the death of the patient. As we have seen, the irregularity varies in degree from time to time and may be diminished by proper treatment. It may even merge into regularity for a while, but qualitatively it remains the same. The evidences of auricular contraction rarely return and slight strain is followed by a more or less marked delirium. The main exceptions to this characteristic permanency are the rather uncommon cases of paroxysmal irregularity, which will be discussed later.

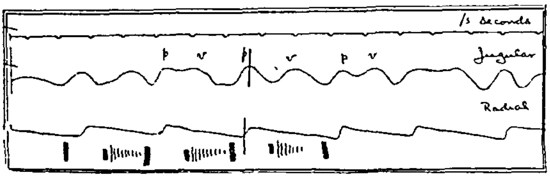

Fig. 5.—Venous pulse during the paroxysms of irregularity, showing an absence of the auricular waves The shading indicates the intensity of the mitral stenosis murmur. Figure reduced one-half.

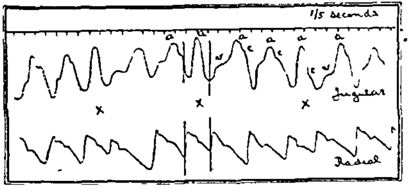

Fig. 6.—Venous pulse on the day following a paroxysm of irregularity, showing the frequent occurrence of auricular extrasystoles. Figure reduced one-half.

ANALYSIS OF CASES.

Etiology.—This analysis is based on the histories of thirty patients who gave the typical tracings of absolute irregularity with absence of auricular contractions. The notes of these cases were often incomplete because many were seen only on account of the arrhythmia. Of twenty-four in whom the age was given, only five were under 40, fourteen were between 14 and 60, and five were over 60. The heart lesion most frequently encountered was mitral insufficiency. This occurred alone in ten cases, and associated with mitral stenosis in five more. Mitral stenosis alone was present in two cases, aortic lesions in three, and adhesive pericarditis in one. The remaining eleven cases showed no definite signs of valvular disease, and largely on account of the symptoms and character of the pulse they were designated as myocardial disease.

Among the etiologic factors in the past histories rheumatism stands pre-eminent, being present in twelve patients. The next most frequent factor, apparently, was the abuse of alcohol, being very marked in ten patients out of the thirty. Hyperthyroidism was the only demonstrable cause in two patients, chronic nephritis in one, while arteriosclerosis was noted in a number of others. It will be seen from these figures that absolute irregularity is most frequently associated with mitral valve disease, especially mitral insufficiency. It appears, however, to be relatively uncommon among younger patients, being more frequent in those over 40. Diseases that are known to cause changes in the heart muscle would also seem to be important causes of this irregularity, especially the abuse of alcohol, marked arteriosclerosis and hyperthyroidism.

Symptoms.—The symptoms of these patients represent all grades of heart failure. In the more severe types, dyspnea, edema and effusions into the serous cavities were common. About a third died or were permanently and totally incapacitated for any effort. In the less severe types the symptoms were less marked. Indeed in two patients no symptoms whatever were complained of. One of these worked as a gardener without any apparent inconvenience except on extreme exertion. The other was a prospector who boasted of his ability to endure hardships and long excursions into the mountains. It is apparent, therefore, that a moderate degree of irregularity associated with auricular paralysis is not enough in itself to cause severe symptoms. This seems to be especially true when the irregularity is unassociated with valvular disease.

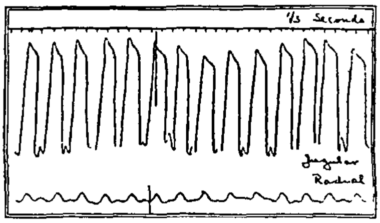

Fig. 7.—Tachycardia with positive venous pulse before strophanthin injection. Figure reduced one-half.

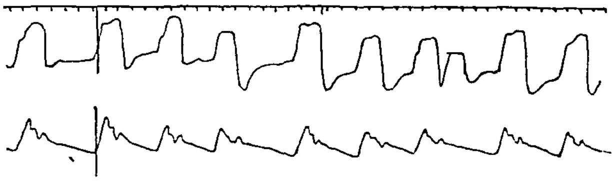

Fig. 8.—Pulse from the same patient as Figure 7, after the strophanthin injection; a typical absolutely irregular pulse.

On the other hand, it undoubtedly adds to the gravity of the situation. The circulation can not be so good when the heart is contracting irregularly. The effect of the auricular paralysis independently of the irregularity is difficult to estimate, but Henderson's studies[8] would seem to indicate that the auricles play a less important part in the normal filling of the ventricles than is generally supposed. The effect of the irregularity is well illustrated in the case of paroxysmal arrhythmia already referred to, for the paroxysms caused this patient to suffer from precordial distress and decidedly increased dyspnea on exertion.

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[8] Amer. Jour. Physiol., xvi, 325.

Relation to Tricuspid Insufficiency.—The relation of absolute irregularity to tricuspid regurgitation is of great importance, but it can not be defined with exactness at the present time. That many of these patients do suffer from tricuspid insufficiency is evidenced by the typical murmur, the positive plateau on the venous pulse, and the positive pulsations of the liver. In not a small number, however, especially after compensation is moderately restored, the liver ceases to pulsate and no murmurs whatever can be heard over the heart. In such cases the only possible evidence of tricuspid insufficiency is the positive venous pulse. Since the time of Riegel's[9] paper in 1881 this has been regarded by many as a pathognomonic sign of tricuspid insufficiency; but, in my opinion, we are not justified in diagnosing tricuspid insufficiency in such cases, for the abnormal venous pulse may be explained solely on the assumption of an auricular paralysis.[5]

Enlargement and tenderness of the liver was noted in a large proportion of my patients. In many the liver could be felt at the level of the umbilicus and pulsated vigorously during the stages of broken compensation. As compensation returned the tenderness and pulsation often diminished or disappeared and at the same time the liver became smaller. Most, if not all, of these cases were associated presumably with tricuspid regurgitation.

RELATION TO PAROXYSMAL IRREGULARITY.

Delirium cordis may occur in paroxysms which last but a few hours or days. The subject has been reviewed recently by Cushny and Edmunds[10] and by Hornung.[11] The following case presents a good example of this form of irregularity:

History.—Mrs. B., aged 55, was referred to me on account of an influenza and a right-sided hemianopsia. Her family history was negative. She had suffered from four attacks of facial paralysis at different times in the past thirty years, the first being on the right side and the remainder on the left. The last occurred in 1906 and was very mild. She never had acute articular rheumatism. In June, 1906, she was treated for heart disease, which became so bad a month later that she was unable to sleep in a recumbent position on account of dyspnea. Since then she had had several moderate breaks in compensation with dyspnea, cardiac distress and at times slight edema. In the intervals her compensation had been fairly good. In June, 1907, she was suddenly seized with weakness in the legs. Immediately after the seizure she noticed that the right leg was insensitive to touch, to pinches, and to the heat of a hot-water bottle. The weakness disappeared from the left leg almost immediately, but the right remained weak for several days. The disturbances of sensation also gradually passed off, and at the end of ten days she had completely recovered. Her rectal and bladder functions were not affected. On Dec. 1, 1907, while riding on a street car, she sustained an emotional shock, and her ideas became so confused that she was unable to find her way home without slight assistance. At dinner she noticed for the first time that she was unable to see objects to her right. She also had some headache for the next forty-eight hours, but no nausea or vomiting. I was called to see her Feb. 3, 1908. An epidemic of influenza had been passing through the household and she was suffering from the usual symptoms of this infection. In addition, she presented the typical signs of a mitral stenosis. She was also found to have a right-sided hemianopsia, more marked in the upper quadrant. Subsequent examinations showed a gradual improvement in the fields of vision until when seen the area of total blindness was limited to a small spot in the upper right quadrants of both eyes. Her hemianopsia was probably due to an embolus in the right occipital lobe. Probably also the transient paraplegia was due to a slight embolic process in the lower cord.

Examination.—On my first examination the pulse was 80 per minute and perfectly regular. The mitral stenosis murmur was of a marked presystolic type, with little if any rumble in early diastole (Fig. 3). Three days later, after her temperature had fallen to normal, she complained of precordial distress and felt unusually weak. The heart action was found to be absolutely irregular and about 120 per minute (Fig. 4). The mitral murmur had completely changed its character. Its presystolic accentuation had disappeared, and it was now loudest just after the second sound and in the longer diastolic intervals it practically disappeared before the occurrence of the first sound (Fig. 5). The following morning the heart action was again absolutely regular and 85 per minute, and the murmur had returned to its customary presystolic type. The early diastolic portion of the murmur was almost inaudible. The precordial distress and general weakness had passed away.

Subsequent History.—Since that time the patient has had about seven of these paroxysms of cardiac irregularity, and I have been able to observe her in three of these. These seemed to begin abruptly and were induced more especially by emotional disturbances, e. g., by seeing a dog nearly run down by a street car. Other attacks seemed to follow physical exertion. The attacks usually lasted during the day and passed off during the following night, the termination often being associated with sweating. During the paroxysms the patient felt weak, short of breath on exertion, and suffered considerable distress from cardiac palpitation. Examination of the heart during the paroxysms showed a slight enlargement of the cardiac dulness, and an absence of the presystolic accentuation of the mitral stenosis murmur. Between attacks her venous pulse was of the normal type, with a fairly prominent auricular wave (Fig. 3), while during the attacks no sign of an auricular contraction could be discovered in the jugular pulse (Fig. 5). It seems fair to assume, therefore, that during these paroxysms her auricles had ceased to contract normally.

Cushny and Edmunds[10] have suggested that such attacks may be due to fibrillation of the auricles. In the case of our patient this hypothesis receives a certain amount of support from the fact that on the day subsequent to one attack numerous auricular extrasystoles were observed (Fig. 6), indicating that the auricles were abnormally irritable. Mackenzie believes that such paroxysms may be due to an abnormal irritability of the node at the upper portion of the His bundle, which may take on the function of initiating the cardiac rhythm.

The exciting causes of the paroxysms in our patient were, as a rule, excitement or exertion. Hornung[11] has also noted psychic causes of such paroxysms. In one of his patients the irregularity frequently accompanied defecation, but finally it would be induced when the patient merely started for the toilet. Fr. Müller[12] refers to patients in whom paroxysms were caused by overloading the stomach and were relieved by vomiting or lavage. Although it seems probable from these observations that such paroxysms of irregularity may be induced by nervous influences, nevertheless some other factors are probably present which render certain hearts susceptible to such nervous influences. Hornung emphasizes the arteriosclerosis in three of his four patients, and mitral valve disease was present in both of mine.

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[9] Ueber den normalen und pathologischen Venenpuls, Deut. Arch. f. klin. Med., xxxi, 1.

[10] Paroxysmal Irregularity of the Heart and Auricular Fibrillation, Amer. Jour. *of the Med. Sci.*, cxxxiii, 56.

[11] Ueber atypische tachykardische Paroxysmen, Deut. Arch. f. klin. Med., xci, 469.

[12] Müller, Fr.: The Nervous Affections of the Heart, Arch. of Int. Med., i, 1.

The relation of such attacks of cardiac arrhythmia to the permanent form of absolute irregularity is probably an intimate one In my patient the paroxysms were associated with auricular paralysis just as is the case in the typical permanent form. Paroxysms have also been noted in patients who subsequently developed a permanent delirium One of mine had been admitted to the hospital several years before with delirium cordis This had disappeared after a few days, as was shown by the radial tracings taken at the time. At present he suffers from typical permanent irregularity

RELATION TO TACHYCARDIA

There is a form of tachycardia which is associated with a positive venous pulse with absence of auricular waves This may be of the paroxysmal type with a normal venous pulse between the paroxysms or it may occur when evidence of auricular contractions is permanently lacking The latter is certainly closely related to the permanent form of absolute irregularity, and several observers[7] have noted that the two may alternate in the same patient I have observed a sudden change from tachycardia with a positive venous pulse to the absolutely irregular pulse This patient who had myocardial disease was given an intravenous injection of one milligram of strophanthin Within a few minutes his pulse changed from a regular rate of about 150 per minute (Fig 7) to an absolutely irregular pulse of about 70 per minute (Fig 8) At the same time his symptoms improved greatly Since that time his pulse has been for the most part absolutely irregular, though at times it shows a tendency to return to the tachycardia that was present when he was first seen The relation of paroxysmal tachycardia to the irregularities under discussion is less certain, but Hornung[11] has seen a paroxysmal irregularity pass directly into a paroxysmal tachycardia so that there seems some justification for grouping the latter close to the absolute irregularities

THE EFFECT OF DIGITALIS AND ATROPIN

It may be said in general that digitalis and atropin have much the same effect on absolutely irregular hearts as they have on normal hearts Atropin increases the heart rate and digitalis slows it Mackenzie[2] is of the opinion that digitalis acts especially on those irregular hearts which are associated with mitral valve disease but I have seen similar results follow its use in patients with myocardial disease The most striking digitalis effects are produced by the intravenous injection of strophanthin for here the change in heart rate occurs within a few hours, and other accessory factors, such as rest in bed, can be eliminated In addition to slowing the pulse digitalis usually renders it less irregular, increases its size and improves the subjective and physical condition of the patient In my experience, however, neither digitalis nor atropin have ever caused the pulse to return to a normal character

DISCUSSION

Dr Robert H Babcock, Chicago During the last few years Mackenzie's work has revolutionized our ideas of cardiac arrhythmia, and much work has been done by others also The great difficulty lies in the fact that the use of the instruments by which the heart's irregularity is determined is difficult and in fact belongs to the expert It requires an expert to obtain good jugular tracings as well as to interpret the tracings obtained The fact remains however, that we are to depend on the use of instruments in the diagnosis of cardiac disease, not only in recognizing cardiac disease but also to aid in deciding on the therapeutics appropriate in cardiac disease For it is evident that when there is some serious interference with the transmission of stimulus to contraction from venous sinuses to ventricles with a disturbance in the cardiac rhythm of one kind or another, certain medicines such as those belonging to the digitalis group, are not beneficial but actually dangerous

Dr Arthur D Hirschfelder, Baltimore Paralysis of the auricles was first demonstrated experimentally on animals by von Frey and Krehl in 1890 and subsequently on man by Mackenzie in about 1894 by means of the venous tracings The absolute demonstration, however was not really decisive until Dr Hewlett demonstrated it by means of a tracing from the esophagus Prior to this it might have been possible for a weak auricular contraction to go on without registering on the venous pulse, but now comparatively small contractions can be recorded in these excellent esophageal tracings Therefore, it would appear as demonstrated almost beyond a shadow of a doubt Auricular paralysis is very commonly seen in experiments on animals In fact one can hardly experiment on exposed hearts without finding paralysis of the auricle at some period or other during cardiac failure No trace of fibrillation can be seen under these conditions in any part of the auricle Clinically I can only agree with Dr Hewlett's findings I have found transitory periods of auricular paralysis, etc, with absolute irregularity in cases of mitral stenosis, and disappearance of the presystolic auricular rumble at these times I have been able to obtain the same thing in animals in experimental mitral stenosis When mitral stenosis is brought about slowly, I have obtained, first, a gradual slowing in the diastolic filling of the heart After the production of a more marked stenosis diastole was divided into three periods First, a period of rapid filling, a second period, in which there was a little further filling, and a third period marked by contraction of the auricle About one half of the filling of the ventricle was due to this contraction of the auricle, as compared with about one fifth in the normal heart The presystolic rumble was loud under these conditions If the mitral stenosis was further increased auricular paralysis set in arrhythmia also appeared, and the presystolic rumble disappeared In other words, a large part of the filling of the heart was due to auricular systole and also led to a presystolic rumble and later, when auricular paralysis appeared, the auricular sounds disappeared Clinically I have been able to find sounds similar to those described by Dr Hewlett as a diastolic murmur This was particularly true in one case, in which I was able to hear a soft blowing murmur throughout diastole heard at the apex and along the left border of cardiac dulness and also just above the angle of the scapula corresponding exactly to where one would expect to hear if it was produced in the left auricle

Dr W S Thayer Baltimore I feel that the term “presystolic” murmur applied so commonly in literature in a general way, to the mitral diastolic murmur is rather unfortunate As a matter of fact. heart murmurs heard in mitral stenosis vary greatly in character 1 One may hear at the apex of the heart a characteristic rumbling murmur limited to that part of diastole immediately preceding systole, that is, to the time of the auricular contraction 2 The murmur may begin shortly after the second sound with marked presystolic accentuation 3 The murmur, of fair intensity, may begin shortly after the second sound, which diminishes in intensity during the middle to increase again at the end of diastole 4 The murmur may begin shortly after the second sound disappearing entirely during a good part of diastole and reappearing again at the time of auricular contraction 5 The murmur may be observed to begin closely after the second sound and to disappear entirely before the period of auricular systole In all these cases in which the murmur begins in the early part of diastole it is usually ushered in by a slight snap the so called ‘opening snap’ of mitral stenosis probably due to the early tension of the sclerotic and adherent mitral valves 6 One may hear only the first and second sounds and the opening snap without murmurs 7 One may hear no adventitious sounds whatever in the long pause. It is then by no means uncommon for a mitral diastolic murmur to occupy a position in the cardiac cycle other than that of presystole.

Dr. Edward F. Wells, Chicago: Any one who studies the cardiac rhythms will find them very suggestive, and I have studied them for many years. Some very curious features have cropped out in these investigations. For instance, the heart at one time may have presented a fairly regular rhythm, but as time goes on irregularities of the heart become more common, if not the rule. As pointed out, the paroxysmal character of the arrhythmia may be extremely marked. For example, in tachycardia the rhythm is usually irregular, sometimes very much so. This same applies, but to a much lesser degree, to paroxysmal bradycardia. I have under observation at the present time a man 75 years old with paroxysmal irregularities of the heart; these paroxysms are very profound and accompanied by cardiac distress, coldness of the skin, perspiration, etc. In this case it was noticed several years ago that efforts at vomiting would relieve the paroxysms. Although the pulse is rapid and might be classed as paroxysmal tachycardia, still the irregularity is so great that it belongs to the category of paroxysms of irregularity of the heart. In this patient, aside from marked arteriosclerosis, *nothing could be found to account for these irregularities.* There are other forms of irregularity, with tachycardia or bradycardia, in which the preceding features were very suggestive. For example, I have under observation one case, a woman, whose occupation requires her to lift heavy objects above her head. Her attacks are frequent and are brought on by this heavy lifting. Sometimes the attacks are short, sometimes prolonged. I have another patient under observation with paroxysmal bradycardia in whom the attacks may be induced by suspended respiration.

Dr. R. C. Allen, St. Joseph, Mich.: There is one fact that evidently has been overlooked; that is, that many of the symptoms described are often the result of reflex phenomena rather than of organic disease of the heart. I do not refer to any special cases. In many cases it is difficult to draw a line between the many forms referred to, whether they are due to organic disease of the heart or to reflex disturbances or irritation. This is a fact very well illustrated by the last speaker. His cases might have been reflex in origin. I have a case in which there is a purely neurotic cause, a result of reflex irritation. This is a fact which I consider important and worthy of consideration. In these cases of mere tachycardia, with difficulty of respiration, etc., I would place the patient on morphin, bromid of potassium or similar agents, and the symptoms would abate.

Dr. G. W. McCaskey, Fort Wayne, Ind.: It seems to me difficult to demonstrate positively the occurrence of auricular paralysis. The absence of tracings by the intra-esophageal method is perhaps very nearly conclusive, beyond which it is impossible to entirely exclude weak and inefficient contractions of the auricle. I wish to call attention to the importance of the use of the stethoscope simultaneously with the graphic methods, as well as in the study of presystolic murmurs as a further evidence of auricular paralysis. The stethoscope is valuable in those cases in which the ventricle has apparently failed to contract in consequence of an inefficient auricular contraction or functional impairment of conducting fibers. Where there is no radial pulse and no palpable apex beat by means of the stethoscope, I am sometimes able to distinguish inefficient contractions, which would produce no pulsation whatever.

Dr. A. W. Hewlett, San Francisco: Experimental observations in regard to the production of auricular paralysis with absolute irregularity have been limited to acute conditions, whereas the clinical form of absolute irregularity is chronic and this has not yet been produced experimentally. I agree with Dr. Thayer regarding the various forms of the murmur of mitral stenosis. The presystolic accentuation when present denotes that the left auricle is active. This accentuation is absent when the pulse becomes irregular, thus adding one link to the evidence that shows that the auricle is not contracting to any demonstrable extent.

The prognosis of absolute irregularity depends on whether the condition is a paroxysmal or permanent one. If the former, the attack may be terminated by some obscure reflexes just as it may be initiated by such reflexes. If the latter, I know of nothing which will cure the irregularity. We can merely hope to improve the condition of the patient.

THE RELATION OF ANTICYCLONIC WEATHER TO THE PREVALENCE OF LA GRIPPE AND PNEUMONIA ON THE NORTHERN HEMISPHERE.

WITH SPECIAL REFERENCE TO RECENT EPIDEMICS OF PNEUMONIA IN CHICAGO AND SAN FRANCISCO.*

C. M. RICHTER, M.D.
SAN FRANCISCO.

The report of the pneumonia commission of New York,[1] issued at the end of the year 1905, contains the words: "Our studies have thrown no light whatever on the conditions which determine the onset of lobar pneumonia in apparently healthy persons. Moreover, we have been unable to draw conclusions as to the presence of pneumococci in the lungs during life, or as to the channels by which they gain access thereto." The United States Census Report of 1900 says: "The very fact of an increasing mortality from pneumonia in late years, when general hygienic conditions have steadily improved, would disprove the efficiency of such a course of prophylaxis."

Juergens[2] in a summary of the latest researches on pneumonia refers to the attempts made most recently to discover a positive difference between the pneumococcus of a healthy mouth and that of the pneumonia mouth and asserts the absolute failure to establish a specific character for the pneumococcus of pneumonia.

Where there is still so much darkness I hope I may be pardoned for directing attention to certain conditions of the atmosphere which accompany pneumonia epidemics over the entire northern hemisphere, and to the knowledge of which San Francisco seems to give the key.

Osler[3] says that "cold" has been for years regarded as an important etiologic factor, but that in fact there is very little difference in various state groups of the United States.

Musser and Norris,[4] referring to meteorologic influences, say that "owing to the complexity of the problem, an exact scientific solution of it is still unattained." They add: "Most writers have attributed a predisposing potency to change of temperature."

At the session of the American Medical Association, San Francisco, June 5-8, 1894, I read a paper[5] on the influence of atmospheric pressure on the prevalence of pneumonia. I maintained then that excessively high air pressure appears coincident with epidemics of pneumonia in the northern hemisphere and exhibited charts demonstrating this fact for a number of cities. That paper had been made possible by a study of the different climatic regions of California in their relation to morbidity and mortality from pneumonia.

And so-called "cold weather diseases" were prevalent in California, but the cold weather missing, I charted all the different meteorologic factors and the pneumonia mortality figures together for a number of years for the different climatic regions of California, and could thereby establish the fact, that, at least everywhere in California, in the Sierra as well as near the seacoast, there was absolutely no relation between temperature and humidity and such mortality, but a clear relation between periods of high air pressure and such mortality.

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*Read before the San Francisco County Medical Society, March, 1908.

[1] Pneumonia Commission: Am. Med., Sept. 23, 1905.

[2] Med. Klin., 1907, No. 10.

[3] The Principles and Practice of Medicine, 1906.

[4] Osler, W.: Modern Medicine, 1907, iii.

[5] Influence of Atmospheric Pressure on the Prevalence of Pneumonia, The Journal A. M. A., 1894, xxiii, 188.

One may consider San Francisco as the best city in which to make a research in regard to the influence of weather on disease. Hardly any other large city on the northern hemisphere has as little difference between the mean temperature and mean relative humidity of January and July.

TABLE 1.—METEOROLOGIC RECORDS.

NORMAL AIR PRESSURE.

	Jan.	Feb.	Mar.	Apr.	May	June
Chic.	30.09	30.07	30.02	29 99	29.96	29.95
S. F........	30.11	30.10	30.06	30.05	29.99	29 95
	July	**Aug.**	**Sept.**	**Oct.**	**Nov.**	**Dec**
Chic.	29.98	29.99	30.04	30.04	30.06	30.08
S. F........	29.95	29.93	29.94	30.01	30.08	30 12

NORMAL TEMPERATURE.

	Jan.	Feb.	Mar.	Apr.	May	June
Chic.	23.4	26.8	34.1	45.6	56.1	66.7
S. F........	50.1	51.7	53.6	54.6	56.6	58.4
	July	**Aug.**	**Sept.**	**Oct.**	**Nov**	**Dec**
Chic.	72.0	70.9	69.2	52.0	38.4	29.3
S. F........	58.3	58.7	60.4	59.3	56.3	51 4

NORMAL RELATIVE HUMIDITY.

	Jan.	Feb.	Mar.	Apr.	May	June
Chic.	81	81	75	71	70	72
S. F........	79	77	78	78	78	79
	July	**Aug.**	**Sept.**	**Oct.**	**Nov.**	**Dec**
Chic.	67	68	69	69	77	79
S F........	83	85	80	79	75	81

Extreme winter and summer temperatures and extreme cloudiness are not to be feared in San Francisco. The lowest temperature in Chicago is 23 below zero, in San Francisco 29 above, a difference of 52 degrees. On the other hand, San Francisco could easily take the laurels from Chicago as "the windy city" in summertime. In San Francisco ocean winds are prevailing during nine months of the year. Of course it brings ocean sand with it, which we call sometimes an abominable dust. The prevailing wind of Chicago is southwest, but during five months it is northeast, coming from the lakes. San Francisco is not a densely populated city, like Chicago, and enjoys a rather pure ocean atmosphere, very different from the air inhaled in Chicago, New York, London, Paris or Berlin.

It is the presence of the Pacific Ocean and the westerly direction of the winds that insures high winter and cooler summer temperatures for San Francisco. Even Chicago's winter temperatures are somewhat ameliorated by the large area of fresh water near it.

San Francisco has an average of sixty-nine rainy days in the year and Chicago has one hundred and twenty-six. The percentage of possible sunshine is 57 per cent. for Chicago and 63 per cent. for San Francisco.

The second table gives the even temperature and humidity line for San Francisco for every day of the eleven years, 1888 to 1899, in contrast to the lines of pneumonia mortality and air pressure.

These facts prompted me to make a study of the pneumonia epidemics of Chicago and San Francisco for the five years, 1899 to 1904, in their relation principally to air pressure.

Meteorologic observations and figures take the place of experiments, when periodical changes in the atmosphere and their effect on climate are to be investigated. Such research should be more encouraged.

A fundamental difference between low and high air pressure, that is, between cyclones and anticyclones, lies in the fact that during the cyclone the lower air, the ground air, the air that had been with us since the last anticyclone, is ascending into the upper atmosphere, while during an anticyclone the reverse takes place: the air is coming down from the higher levels of the atmosphere.

The anticyclone is represented by a gyration of air that enters at the top and flows out at the bottom. The air is descending almost vertically in the center and shows an outward flow everywhere in the circumference of the anticyclone. The distance of the center of an anticyclone from that of a cyclone is generally about 2,000 miles in the United States and often more than that in Europe. It is not seldom that the entire area of the United States is covered by an anticyclone.

The cyclones travel at the rate of twenty to sixty miles an hour, the anticyclones show a similar speed, which is, in fact, the speed of our railroad trains, and which is the speed with which grip epidemics are said to travel.

Suppose that an anticyclone has its center at half distance between Chicago and San Francisco, then it is clear that some of its center air may travel at this rate 1,000 miles toward San Francisco and some of it 1,000 miles toward Chicago. It is at present assumed that the so-called "wandering" cyclones are rather shallow, extending *only about two or three miles upward.* They are not supposed to feed the anticyclones with their air, as the anticyclones extend higher.

The continuous procession of such areas of low and high air pressure from a westerly to an easterly direction in our latitudes furnishes the rainstorms and the fine weather periods during the so-called cold season.

The anticyclones sometimes stop wandering. Such anticyclones seem to have a dynamic, not like the rest of them, a thermic origin. They represent a blocking of the higher and lower atmosphere and it seems that cyclones in their neighborhood have no effect whatever on their gigantic mass of air that may cover the area of the United States, or of Europe and Asia together. Such anomalous anticyclones bring generally much higher pressure than their wandering cousins and they last longer.

Without doubt they bring an atmosphere to our lungs quite different in quality from the one coming out of a shallow high. I may say right here that periods of increased activity in the sun bear a certain relation to the appearance of such increase of air pressure on our globe. The sun is practically the sole source of the energy which maintains the movements of the earth's atmosphere. It is the center of a continuous outflow of radiant energy, some of which is appropriated by the earth. This outflow is more or less modified by certain periods of the sun's activity.

One of the greatest living meteorologists, J. Hann, has said only recently that "the problem of weather periods and their connection and dependence on the activity of the sun is one of the grandest and most beautiful problems of modern meteorology."

The highest levels of our atmosphere are more directly affected by this energy than the lower levels, and thus the air that flows down to us during a period of a stationary anticyclone is modified, according to the special conditions of the sun that may have affected it. For instance, ozone is formed in the highest atmosphere consequent to the absorption of ultraviolet rays; and all know the irritating effect it may have on mucous membranes.

Then again, since radium became known to us, we became acquainted with radioactivity, which is considered now a universal property of our atmosphere. A constant ionization is going on in our atmosphere, due to the radioactivity of our earth and to the work of sun-rays. Radioactive influences seem to be derived principally from the pores of the earth.

Physicists, in following up this matter, find that during cyclones this radioactive influence becomes exceedingly marked in our atmosphere. The ascending air sucks the emanation out of the soil. In consequence negative electricity predominates in our atmosphere.

During an anticyclone the rising of such radioactive emanation seems more or less prevented by the increase of air pressure over the capillaries of the earth. In consequence positive electricity prevails. As we have no special sense for electricity, nor for air pressure and its variations, we do not become aware of the tremendous differences that exist in the air we breathe during different weather conditions. In general, it may be said that during a cyclone, at least during the beginning of one, the air is filled with all the impurities that possibly can be lifted and carried upward from the ground. During an anticyclone the atmosphere coming to us should represent the purest air possible, an air possessing all qualification that the sun's energy may impart. The higher the air pressure, the higher probably is the origin of such air and the more specific is such quality.

How can such relatively pure air be of detriment to our lungs? Has change of air pressure in itself any possible effect on our system? A London physician, Dr R. Mead, wrote in 1746:[6]

> The whole body, in the heaviest air (30.8 inches) sustains weight of about 33,684 pounds; in the lightest (28 inches) 30,622 pounds 5 ounces. The difference of pressure at different times is 3,062 pounds. True it is that the internal air of the human body makes a resistance to that weight, but yet such change of pressure must necessarily have considerable effects. Such effects must of necessity be most visible in weak bodies and morbid constitutions, when other circumstances concur to their taking place, while strong bodies and sound constitutions are little affected by them.

In regard to the effect of electricity on our body, Prof. J. Loeb says that "nature has so safeguarded the electric conditions, and especially the equilibrium of electric forces within the body, that any disturbance of this by external electric force is utterly impossible. We are so constantly placed on varying electric conditions because of alterations in the electricity in the earth and the air, that if this were not the case animal life would be in almost constant danger from the magnetic storms that are so frequent."

But is it true that we are so safeguarded? Was the London physician nearer the truth in 1746, when he had his doubt about weak bodies? Is the terrific morbidity and mortality from pneumonia not perhaps a proof of an insufficient safeguarding?

Dr. W. T. Howard of Cleveland[7] had 35 per cent. pneumonia in 550 autopsies; 6 per cent. were due to primary and 29 per cent. to secondary pneumonia. He says that 50 per cent. of his autopsies on typhoid-fever subjects showed pneumonia.

Any reflex action on the mucosa of the air passages may cause a hyperemia, or such molecular changes in the mucosa that a *secondary infection may become established*.[8] Whether air pressure or ozonization, or a specific ionization may cause such reflex actions, we do not know. Whether other potencies of the higher atmosphere may influence our health, we do not know.

However, these tables may demonstrate that during a prevalence of anticyclonic weather and especially *inside the area of a stationary anticyclone, pneumonia and grip are generally prevailing* and sometimes become epidemic.

That temperature, sunshine and humidity are in no relation to the prevalence of pneumonia I tried to prove by the San Francisco table. During the entire period of eleven years from Aug. 1, 1888, to May 2, 1899, there are *only two great epidemics of pneumonia* in San Francisco and they are representing at the same time the only *two periods of excessively high air pressure* that have been registered during those years.

About 340 deaths from pneumonia occurred during the continuous nine weeks ending March 11, 1890, and about 380 deaths during the continuous nine weeks ending Jan. 26, 1892. Not before 1890, nor after that year until the summer of 1904—my records go to 1904—has the mortality from pneumonia again reached such figures for any continuous nine weeks in San Francisco.

Of course we may call grip responsible, but then we have to blame excessive air-pressure periods for the prevalence of both diseases.

The increasing population of San Francisco, therefore, can not be blamed for an increase of the mortality from pneumonia. It seemed wise, just for this reason, to compare two cities like Chicago and San Francisco in regard to their pneumonia mortality and their air-pressure conditions. The second table gives a highly interesting problem of pneumonia epidemics.

To make the comparison as direct as possible, I gave on this table the mortality figure of San Francisco five times higher than the actual one, as the population of Chicago was just about five times higher than that of San Francisco during that period. It may be seen without difficulty that there are real epidemics of pneumonia in almost every year in either city; that they are not synchronous; that they are quite different in the figure of mortality in the different years and that these figures are not increasing from year to year; that the mortality of Chicago comes to a very low ebb every summer, except 1903; that San Francisco has a reduced, but still considerable mortality from pneumonia every summer, especially 1903, and that all these epidemics of Chicago and San Francisco are keeping most accurate pace with the increase and decrease of air pressure, as registered in these cities. If we select nine continuous weeks as a time unit of the lowest and highest mortality in either city for the five years, we find the following figures to represent mortality and air pressure:

In this comparison I have included the air pressure figures for the two weeks preceding the continuous nine weeks of lowest and highest mortality from pneumonia during the five years. We have, therefore, the air pressure figures for seventy-seven days and the mortality figures for sixty-three days. It is obvious that this should be done, and it is doubtful whether the air-pressure figures should stop two weeks before the end of the continuous nine weeks of mortality.

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[6] A Treatise Concerning the Influence of the Sun and Moon on Human Bodies, and the Diseases thereby Produced, London, 1746

[7] The Frequency and Etiology of Acute, Non-tuberculous Pneumonia in a General Hospital, Am. Med., Oct. 28, 1905.

[8] Strasser, A.: Erkaltung und Abhartung, Deutsch. Klin., 1903, I.

TABLE 2.—CHICAGO AND SAN FRANCISCO PNEUMONIA MORTALITY.

Days with air pressure of:	30.2 and above.	29.9 and below.	29.9-30.2
1. Lowest mortality from pneumonia.			
Chicago, 9 continuous weeks Summer, 1900. Mortality, 18.3 per week.	2 days	11 days	61 days
San Francisco, 9 continuous weeks Summer, 1901. Mortality, 38.2 per week.	none	18 days	59 days
2. Highest mortality from pneumonia.			
Chicago, 9 continuous weeks Spring, 1904. Mortality, 148.8 per week.	31 days	16 days	30 days
San Francisco, 9 continuous weeks Winter, 1900-01. Mortality, 137.1 per week.	24 days	13 days	40 days

These examples make it quite clear that it is not the cyclonic, but the anticyclonic weather that is in correlation to these epidemics. Chicago had a mortality of over 19,000 during the five years (256 weeks) and San Francisco of over 20,000 (1,328 cases more). Of course only one-fifth of this mortality gives the actual figure for San Francisco. During the cold period of the year Chicago had an average mortality of 101 per week and San Francisco 100 per week. During the warm period Chicago had 44 per week and San Francisco 58 per week.

Undoubtedly the effect of a high-pressure area may become mitigated or entirely offset by an area of very low pressure following it closely and extending over a longer period. The cyclone would remove the air brought by the anticyclone.

Only the closest study of these tables will give an adequate idea of the difficulty in proving a correlation numerically.

To the meteorologist it is clear that such air-pressure figures are only makeshifts in trying to prove a period. It is impossible to prove by them just where the anticyclone gives way to the cyclone, or when the air in its quality is changing from that of the upper to that of the lower atmosphere. It is impossible to give the proper numerical expression to the value of an anticyclone in contrast to the one of a cyclone. Naturally the two areas merge imperceptibly into one another.[9] But the proposition before us is, in future to prove the character of an anticyclone by the character and quality of its air and not only by figures of air pressure. And this is the point where the research of the medical physicist could set in.

My work necessarily has been on empiric lines, but it leads logically to the assumption that there must be something noxious in the air that comes to us during high-air pressure periods, a noxiousness that is in direct relation to pneumonia and grip.

The proposition demands, it seems, a critical examination of the air we breathe during different air-pressure conditions, less with reference to its temperature, moisture, motion and more as to the quality that is imparted by the radiant energy of the sun, by radioactivity, ozonization or whatever physical quality there may be.

Any investigation of this nature should not be limited to proving a reciprocal relation of certain weather conditions and pneumonia and grip as existing in a city or on a small part of our globe, but should be carried on to prove such relation for at least one hemisphere. The southern hemisphere would necessarily show corresponding conditions.

This is exactly what I emphasized in my paper of 1894 when I pointed to the fact that the limits of high air pressure over the northern hemisphere are at the some time the limits of the prevalence of pneumonia. At that time I exhibited charts, demonstrating this fact, for Berlin, Munich, New York, Cincinnati and San Francisco, covering many years, for instance ten years for Berlin and twenty-two years for San Francisco. Likewise, I charted this correlation for St. Petersburg, London, Paris, Naples, New Orleans, Denver and Salt Lake City but, unfortunately, our great fire did away with all these charts.

Periods of excessively high air pressure appear during certain years and certain months on different parts of our hemisphere. In some years European cities will experience this condition as well as cities of the United States almost during the same month—sometimes only one continent will exhibit this feature.[10]

But epidemics of pneumonia or grip are always developing in consequence. The two greatest epidemics of grip that existed in Europe during the last century were the two of 1833-'4 and 1889-'90 and the entire nineteenth century had the highest air pressure recorded just during those two winters.[11]

I would like to close these remarks with the words of the great clinician, Ziemssen, who, alluding to epidemics of grip and pneumonia, wrote many years ago:

> After all we can not but assume that there must be general conditions, perhaps multiplied by local circumstances, which appear and disappear simultaneously by great expanse of space. Of what nature these influences may be, is perfectly dark. We would not be forced to think of miasm or contagion We are more led to believe, that fluctuations of other conditions, extending over great areas of the surface of our globe at the same time, furnish an analogy.

CONCLUSIONS.

Pneumonia is not merely a concomitant of the cold weather season.

Its prevalence depends on anticyclonic weather, summer and winter, on the northern hemisphere, and not on low temperature.

There is sufficient reason to assume that the quality of the air of an anticyclone changes in conformity with changes in the activity of the sun and that the prevalence of grip and pneumonia is subject to a specific quality of such air.

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[9] Henry, A.: Climatology of the United States, 1906.

[10] Hann, Julius: Lehrbuch der Meteorologie, ed. 2, 1906.

[11] Richter, C. M.: Sonnenflecken, Erdmagnetismus und Luftdruck. Meteorol. Ztschr., 1902, xix.

Sterilizing Action of Sunlight on Hides.—V. Cavacini states that hides containing the germs of anthrax do not as a rule become sterilized by the various factors of the tanning process. He cites W. Koch to the effect that Russian soldiers have contracted malignant pustule from leather used on their uniforms. Sunlight, however, seems to have a direct sterilizing action—hides exposed to sunlight were found sterile after 130 hours of exposure in numerous tests with various pathogenic germs. It seemed to be immaterial whether the hides were moist or dry, and free from hair or not. If the sterilization was not complete, the germs left retained their pristine virulence unmodified. These statements are based on considerable personal research by Cavacini, reported in the *Riforma Medica*, June 29.

TRAUMATIC CERVICAL MYELOMALACIA.

REPORT OF A CASE WITH NECROPSY.*

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In this paper attention is directed to the nature of lesions in the spinal cord, which are produced by traumatism to the spinal column, in cases in which pressure on the spinal cord by dislocated bone is absent or present only for a short time. The diagnosis of such a lesion is difficult, especially when it is, as in this case, practically confined to the anterior horns. It is most important, from a practical standpoint, to differentiate the symptoms from those produced by pressure on the cord and from traumatic hysteria, both of which require materially different treatment. The differential diagnosis between a hysterical and an organic affection may be difficult, but it is even more difficult to decide, in some cases, whether certain symptoms present in a case of undoubted organic disease may not be of hysterical nature. For instance, Claude and Rose[1] report a case in which they make a diagnosis of hysteria combined with symptoms of compression of the spinal cord probably due to Pott's disease. The interest in these cases resides not only in the diagnosis and prognosis, but also in the semeiologic value of certain signs which we usually regard as signs of hysteria.

A case illustrating these points was referred to my service in the hospital of the University of Michigan on Nov. 11, 1907, by Dr. McColgan, of Grass Lake, Mich. The history and pathologic findings were as follows:

History.—A farmer, aged 32, gave a negative family history and previous medical history and denied alcoholic abuse and venereal diseases. On Nov. 10, 1907, he fell about six feet striking his back on the frozen ground. He was not unconscious but said that he could not move his left leg and was carried. to bed. About seven hours later he had some vague pain in all four extremities and then found his right leg also affected. He could move his arms as before. Dr. McColgan found that a prominence in the cervical region of the spinal column probably indicated a dislocation of the vertebræ and he was brought to the University Hospital the next day.

Examination.—On examination at the hospital it was found that he could not raise his arms above his head. He was able to flex both forearms but unable to extend them. He could neither flex nor extend the fingers of either hand. He could flex both wrists but could not extend them. The pectoral muscles on both sides contracted but weakly. He could not move the left leg but the movements of the right leg were fairly well performed. The biceps jerks were present on each side, but the triceps jerk was not obtained on either side. The knee jerks were equal though somewhat diminished.on each side. The Achilles jerks were normal. Irritation of the soles of the feet produced flexion of the toes on both sides. Sensation to touch was apparently normal over both arms and the chest and abdomen. He said that he felt touch and pin-point more distinctly on the left leg than on the right, but felt pain normally all over except on the back of the left hand and fingers where he was unable to distinguish the point of a pin from the head. No area of anesthesia was made out and he never failed to respond promptly when touched, but all over the body and in both legs he would apparently keep on feeling impressions even though he was not touched, sometimes as many as four or five. He could also be made to feel a touch by suggestion. He had passed urine and feces in bed and said that he could not retain them long. This was apparently benefited by suggestion. There was tenderness of the spines of the fourth and fifth thoracic vertebræ but no deformity of the spine at any part. A radiograph of the spine showed no displacement and apparently no fracture of the vertebræ.

He was reexamined the following day because of complete inability to make any movements in either leg except slight movement in the toes of the right side. He said that during the night he could move both legs freely. Except for added paralysis of the right leg the result of the examination was the same as the day before. No areas of anesthesia were present anywhere. An examination of his heart and lungs was negative. Urine and blood examination was also negative.

On examination made Nov. 25, 1907, the patient said that he felt well. He did not move his fingers. He could not or would not, extend his forearms but he flexed both forearms strongly. He moved the right leg freely and with strength. He was able to contract the adductor of the left leg and the quadratus femoris but produced no movement of the leg thereby. The extremities showed no evidence of vaso-motor disturbance and no atrophy. He said that he felt touch and pin-point equally well over both arms and both sides of the body. On the right side of the body there was an area extending from the sixth rib in the axillary line to the lower edge of the ribs and coming forward almost to the median line in which pin-point and touch were evidently promptly felt and, he said, were felt as accurately as on the other side. But in this area with his eyes closed he invariably referred the sensations to the opposite side. There was no transference from the left to the right. He said pin-point was felt as accurately in the left leg as in the right. No area of anesthesia was made out. The soles of the feet were somewhat hypersensitive. There were a number of places on the back near the sacrum where there were skin abrasions. The knee jerks and biceps jerks were present and normal. Irritation of the soles of the feet caused flexion of the toes on each side. He had no incontinence of urine or feces.

On Dec. 7, 1907, examination showed that the right pupil was larger than the left. He could raise the upper arms to a level with the shoulders and in this movement the deltoid contracted normally. He could flex the arms with normal contraction of the biceps and supinator longus, but the triceps were paralyzed, and he could not extend the arms. He could flex both wrists strongly but extension of the wrists was weak. He could not move the fingers or the thumb. There was marked atrophy of the interossi of both hands; there was some atrophy of both forearms and of the triceps on both sides. The skin was very dry and scaly but not atrophied. The triceps jerks were lost on both sides; the biceps jerks were increased on both sides. The ribs did not move in respiration, breathing being entirely diaphragmatic. He had hypalgesia of the right side from the level of the third costal cartilage on down the body extending all over the right thigh, leg and foot. There was no analgesia in the upper extremities. He felt touch equally well all over the body on both the right and left sides. He still *referred sensation to the opposite side* when the right side was touched in the above described area on the chest. Sensation for touch seemed to be somewhat delayed in the body and limbs and he would keep on counting even though not touched. The left leg and thigh were decidedly atrophied. Left thigh 33.5 cm. (13¼ in.), right thigh 43.5 cm. (17 in.), left calf 28 cm. (11 in.), right calf 34 cm. (13½ in.). The skin of the left leg was dry and scaly. The skin of the right leg was moist and normal. The knee jerks were present on each side and about normal. He moved the right leg at all points. The left leg remained paralyzed. Irritation of the sole of the foot caused flexion of all toes on the right side, no movement of the toes on the left side. Sense of position was lost in the left hand, present in the right hand. He was a little uncertain about the position of the toes on both sides.

Jan. 20, 1908, the patient showed general emaciation and weakness his pulse being very weak, but his neural condition remained as before. The biceps jerks were large on both sides; there was also a biceps jerk obtained by tapping the small bones of the wrist on each side. The knee jerks were present on each side, about equal and normal. The skin of the extremities was exceedingly dry and was kept greased in order to avoid cracking. Pain was felt very decidedly in the soles of both feet. Plantar irritation caused no movements of the toes on either side. The patient gradually became weaker, developed an obstinate diarrhea, bed sores over the sacrum and trochanters, and died March 12, at 12:45 p. m. Necropsy was held at 2 o'clock the same day.

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

[1] Rev. Neurolog., Jan. 30, 1908.

Autopsy.—Pathologic findings: There were found several fair-sized bed sores over the sacrum and a bed sore over the right trochanter. The body showed considerable emaciation, with localized atrophy of both forearms and both hands. The lungs were crepitant throughout but appeared decidedly small. The heart contained some air. Other organs were approximately normal. The brain showed no gross pathologic change. The spine appeared to be normal but after cutting through the arches of the vertebræ and removing the cord there was noticed a linear fracture in the body of the sixth cervical vertebræ which allowed motion. Apparently there was no dislocation. The spinal cord showed a depression in the middle of the seventh cervical segment and was hardened in formalin for further examination.

On cross section of the cord at the level of the depression (middle of the seventh cervical) the gray matter was seen to be distinctly softened, distorted on both sides. The white matter was uninjured except the anterior portion of the posterior column. Cross section of the spinal cord at the top of the seventh cervical segment showed that both anterior horns contained softened areas. The lesion was slightly more marked on the left side than on the right and extended into the region of Clark's column (?) and intermediolateral tract. The top of the lower third of the sixth cervical segment showed slight softening in both anterior horns. The lower border of the upper third of the sixth cervical segment showed no lesion. The lesion apparently did not extend upward beyond the middle of the sixth cervical segment. Going downward the lesion disappeared in the upper half of the first thoracic segment. Below this level there was no gross disease visible in the spinal cord.

The sixth, seventh and eighth cervical and first thoracic segments were each cut in three pieces and sections made from the top of each of these pieces. Sections also were made from the mid-thoracic and lumbar regions. A summary of the microscopic findings includes: An area of softening in both anterior horns which, in the eighth cervical segment and the lower third of the seventh cervical, caused complete destruction of them and extended a little into the left lateral column and very slightly into the posterior column. There was a slight inflammatory reaction about the blood vessels in and adjacent to the softened areas but for the most part they consisted simply of softened areas filled with fatty granule cells. There was no free blood pigment. Areas of softening extended upward in the anterior horns as high as the middle of the sixth cervical segment and downward as far as the middle of the first thoracic segment. They were situated in the center of the horn on both sides and did not completely destroy them as they contained some normal staining nerve cells. In the eighth cervical segment and the lower portion of the seventh, the white matter in the vicinity of the anterior horns stained lighter by the Weigert hematoxlyin stain and was evidently partially degenerated. Above these segments there was a degeneration in the anterior parts of the posterior column which did not appear to belong to any system but involved the anterior part of the column of Goll and the cornucommissural zone. There was also distinct degeneration in the region of the right direct cerebellar tract and a doubtful degeneration along the periphery of the left lateral column. In the first thoracic segment there was a slight degeneration in the left crossed pyramidal tract and in the comma tracts of Schultz.

AUTHOR'S EXPLANATION.

My explanation of the pathology of the condition is that there was a slight dislocation of the vertebræ pressing on the spinal cord sufficiently to block the anterior spinal artery but not sufficient to arrest impulses in the spinal cord. This dislocation was spontaneously reduced some time before he arrived at the hospital, as it was not present then, but in the meantime a thrombosis of the anterior spinal artery or its branch in the anterior median fissure caused the areas of softening in the parts supplied by those vessels, namely, the anterior horns and to some extent the adjacent white matter.

I am aware that the usual lesion in these cases of trauma to the spinal column is a hemorrhage into the cord which affects the gray matter more often than the white because of its lesser density; also that the researches of Schmaus show that areas of softening can be produced in the spinal cord of animals by traumatism without the intervention of any such mechanism as I have described. A hemorrhage into the gray matter may have been present in this case at the onset and have been absorbed, but on microscopic examination there was no evidence, such as blood pigment or a cavity, that any such condition had previously existed. Also in the reported cases of hemorrhage the paralysis is more complete and comes on more quickly than in this case. That a traumatic myelitis produced the softening seems to me less probable, both from a clinical and pathologic viewpoint, than that the softening produced the inflammatory reaction which was present. The fact that it was practically confined to the anterior horns of only three spinal segments is, to my mind, much in favor of the latter. Whether it was a hemorrhage or myelitis it seems to me that one of the important points in the pathologic findings was the location of the lesion in the center of the cord, where totally inacessible to operative procedure; and the destructive nature of the lesion which for another reason would contraindicate an operation, by the impossibility of making a cure.

DIFFICULTY OF DIAGNOSIS.

The diagnosis of the condition present was not free from difficulty until the atrophy of the paralyzed muscles in the hands. On admission clinical examination and skiagraphs showed no apparent injury to the vertebræ. This, no doubt, was due to the fact that in an ordinary dorsal position the unbroken arches prevented apparent deformity, and pressure on the spine was not painful at this point. There was no increased motility or ecchymosis. The condition present in the bones in this case, fracture of the body of the vertebra without injury of the spines or arches, is not often described, though self-reducing fracture is not rare in the cervical region of the spine.

We have no clear history of previous hysterical condition in the patient, but hysteria is a common condition in our clinic among the agricultural classes of Michigan and Indiana. The traumatism was not severe. The paralysis was peculiar inasmuch as it apparently advanced and receded, and was of a peculiar distribution for an organic lesion of the cord; both forearms and one leg seemed to be the seat of permanent paralysis, while the paralysis of the other leg apparently appeared one day to disappear the next. The biceps, knee and Achilles tendon reflexes were normal on each side.

There was no Babinski reflex, but we would not have relied on it to make a diagnosis of spinal cord injury, since it is so frequently found absent even though the spinal cord is severely injured. J. J. Thomas[2] reports cases in which the plantar reflex was retained even though the spinal cord was completely severed and refers to such conditions as not uncommon. Allen[3] says that "unquestionably the majority of cases of complete transverse lesion reported have abolition of the plantar reflex." The cases reported by Potts[4] of traumatic cervical hematomyelia and complete division of the spinal cord had normal plantar reflexes. It will be seen, therefore, that at present the condition of the plantar reflex has but little clinical value in these cases. Probably more factors enter into it than are at present understood.

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[2] Five Cases of Injury of the Cord from Fracture of the Spine, Med. and Surg. Reps. Boston City Hosp., 1900, xi, 1.

[3] Injuries of the Spinal Cord, with a Study of Nine Cases with Necropsy, The Journal A. M. A., March 21, 1908.

AN APPARENT HYSTERIC ELEMENT.

The changes found on examination of the sensation were regarded at the time as probably hysteric. No area of anesthesia or analgesia was present at the first examination. On the back of the left hand and fingers he called the point of a pin the head, and there was apparently a hypalgesia of the right leg. The patient while responding to all touches promptly, would at times keep on feeling touches after the examination was finished; whether this was due to suggestion or to so-called after-sensations can not be definitely stated, though it appeared to be due to the former. It will be evident that at this stage none of the symptoms were incompatible with a diagnosis of traumatic hysteria.

Such a diagnosis was rendered more probable at an examination made a few days later by the discovery that in a localized area he had the interesting symptom of allochiria, a transference of sensory impressions from one to the opposite side of the body. This was apparently a true allochiria, since there was no other error in localization. This symptom, the precise diagnostic value of which has been recently written on by Ernest Jones,[5] is considered by him as always due to hysteria. Obersteiner[6] was the first to describe and name this symptom. In his original definition he seems to exclude cases where there is a general defect in localizing sensation which when sufficiently great might cause an error as to which side of the body is touched, but it is doubtful whether Obersteiner really made this distinction in his cases.

This condition is now named by Jones alloesthesia or false allochiria, meaning thereby simply such a severe defect in sensory localization that the point touched or otherwise stimulated may be erroneously located by the patient on some point on the opposite side of the body. True allochiria exists only when the localizing sense is intact, except that the patient refers the stimulus to a corresponding point on the opposite half of the body. Jones publishes a very complete analysis and bibliography of the cases of true and false allochira, and according to him there are only forty-one cases of sensory allochiria on record, of which only twenty-nine can be considered as cases of true allochiria. These were reported by Obersteiner, one, 1881; Ferrier and Debie, each one, 1882; Hammond, one, 1883; Magnin and Féré, one each, 1888; Janet, one, 1890; one by Weiss, 1891; two by Bosc and one by Kerr, 1892; one by Gay, 1893; eleven by Sollier, 1897; one by Lapidous, 1899; three by Trapieznikow, 1901, and one by Sabrazès and Bousquet in 1905. To sum up, out of these twenty-nine undoubted cases of true allochiria, in twenty-six there was no reason to suppose that any other condition besides hysteria was present; in the other three, cases of tabes hemiplegia, and diphtheric paralysis, there was reason to suppose that hysteria was present in addition to the organic affection.

In conclusion, I wish to emphasize my explanation of the mechanism of production of the lesion found in the spinal cord. I would also call attention to the difficulties in the early diagnosis between hysteria and an organic affection of the spinal cord in a case, such as this, in which there was no anesthesia and with normal reflexes and in the presence of allochiria. Finally, while there are numerous cases in which necropsy show that an operation on the spinal column for the relief of a traumatic condition would have been useless, this is such an excellent illustration of the point that I simply call attention to it.

300 South State Street.

DISCUSSION.

Dr. J. J. Thomas, Boston: One lesson that I should like to draw from this paper is that not all cases with hysterical symptoms are cases of hysteria. In a paper I published recently I called attention to a case of organic hemiplegia in a child, in which there were distinct hysterical symptoms that appeared and disappeared. There was contracture on the paralyzed side by which the foot was drawn down, so that the top of the toes touched the ground. Under suggestion this symptom was made to disappear. Frequently, in other cases besides those of multiple sclerosis, where we know hysterical symptoms appear, we get combinations of hysterical symptoms with organic disease; and that fact we can not be too careful to bear in mind. In the cases which I have seen, injury to the spinal cord in which it is impossible to detect either fracture or dislocation of the spine, is the rule. In a number of cases which came to autopsy at the Boston City Hospital, I persuaded the pathologist to remove a portion of the spine, and we could find the dislocation, the seat of injury of the bones, only when the spine was sawed in two lengthwise. It is the rule in injuries to the spinal column not to find dislocation or crepitus, and one has to make very frequently the diagnosis of injury of the spinal column from the injury to the spinal cord. Myelomalacia from dislocation of the spine is rather rare. Hemorrhage is much more common; yet that hemorrhage, in a number of cases which I have seen, is often at a great distance from the actual point which could have been compressed by the dislocation. I have found it as far removed from the point which was crushed as the fifth or sixth segment.

Dr. Frank R. Fry, St. Louis: I believe that traumatic cervical cord lesions are by all odds the most difficult of the traumatic cases to diagnose. We can never be sure from an *x*-ray picture as to everything that has happened. We may see a displacement of the bone in that way, but we can not tell what effect that displacement has had on the cord. As Dr. Thomas has said, we have to make the diagnosis of lesion of this cord from the nervous symptoms, irrespective of the degree of injury that seems to have been inflicted on the bone as revealed by an *x*-ray picture or otherwise. Some years ago I took the ground rather emphatically that we ought to operate in these cases when there is evidence of an important injury; that we ought to cut down if there were a fair opportunity to do so soon enough and investigate. I have seen a number of cases that impressed me that way. I do not see how we are to determine what has happened to bone except by a surgical investigation of this kind. We do not find it out reliably by an *x*-ray picture. We find out certain things, but that is not always convincing, or should not be. I believe that lesions of all kinds in the cervical region are particularly predisposing to hysteria. I have seen them so often.

Dr. William W. Graves, St. Louis: I can hardly agree with Dr. Camp in the idea that the variability in symptoms which seems to have been the main point leading him to suspect a hysterical condition in his patient, could be accounted for only on a hysterical basis. In the very beginning such an assumption might have been warranted, but when we consider the case in the light of his pathologic findings, and

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[4] Jour. Nerv. and Ment. Dis., 1905, xxxiii, 359.

[5] Brain, 1907, cxx, 490; also Lancet, Sept. 21, 1907.

[6] Allochiria, a Peculiar Sensory Disorder," Brain, July, 1881, 153.

when we know from them that there must have been interference with the blood supply in these particular segments of the cords, it is certainly thinkable that the interference with the nutrition of that part of the cord might have been sufficient to bring about variability in the sensory findings and so inasmuch as in his case there were absolutely no other evidences of a hysterical condition, and everything from the very beginning pointed really to an organic affection the assumption of hysteria was hardly justifiable. The symptom of allochiria, while I can not explain it in this case, must be considered as due to some organic affection or to some interference with the function of certain segments of the cord.

Dr. Camp's paper emphasizes another point. There was for a long time doubt and some controversy as to the particular segment of the cord in which the reflex arc for the triceps reflexes was located. The lesion found by Dr. Camp microscopically was in the seventh cervical, eighth cervical and first dorsal segments of the cord. Oppenheim in his studies laid particular stress on the fact that the reflex arc is mainly in the last cervical and in the first dorsal segments. Dr. Camp's findings—radial and biceps reflexes and the absolute absence on both sides of the triceps reflex—confirm the assumption of Oppenheim. These findings pointed conclusively, independently of any other symptoms present to some interference with certain segments of the cord. Furthermore disturbance of motility pointed unmistakably to this interference. The individual could make a fist he could pronate and supinate his forearm, he could flex his arm at the elbow, but extension of the wrist and extension of the elbow were impossible, furthermore, he had another symptom which pointed to the involvement of these segments of the cord, namely, dilatation of the pupil on one side—at any rate, a difference in pupils—so that the findings, even in the beginning, pointed to an involvement of the cord.

I believe that the best indication for surgical interference in injuries to the bony coverings of the nervous system is always to be found in the consideration of the nervous symptoms present, that however extensive a fracture there may be of the skull, or however much deformity there may appear to be about the vertebral column those symptoms in themselves rarely warrant surgical interference, but that it is only by a careful consideration of the nervous symptoms that we can determine positively as to whether or not we should interfere surgically.

DR. CARL D. CAMP, Ann Arbor: I can not agree with Dr. Graves when he assumes that the diagnosis between hysteria and organic affection was not difficult. It was, of course, as an afterthought not particularly difficult to see that all the symptoms, or almost all the symptoms, at any rate might have been due to the lesion found. I can not agree that the triceps reflex is constant. I have found it difficult to obtain in many cases. The peculiar fluctuations of the paralysis and the absence of sensory changes with the exception of allochiria, in the early stages would rather point to the conclusion that this was a case of traumatic hysteria. Of course after the microscopic examination of the lesion and its demonstration as being probably a vascular condition, it is easy to say that the changes in the blood supply might have caused a fluctuation in the extent of the paralysis, but that is still doubtful. I also disagree with the statement that the neural condition is the most important as deciding for or against an operation in these cases. I think that the neural condition (the extent of the paralysis, etc.) has very little to do with deciding for or against an operation. In cases in which the spinal cord symptoms alone are obtained and in which there are no surgical indications from a clinical or *x*-ray examination, I think that operation is probably contraindicated.

Psychologic Nomenclature.—One of the principal tasks before the Sixth International Congress on Psychology which is to meet at Geneva, Switzerland, Aug. 31 to Sept. 4, 1909, is the revision of the nomenclature of psychology. It is expected that several sessions will be devoted to the determination of terminologic equivalents in the four languages, English, French, German and Italian.

CEREBRAL ABSCESS.

EMIL AMBERG, M.D.
DETROIT, MICH.

History.—A local physician told me incidentally that he was treating a girl about 12 years old whose ears had been discharging since soon after birth, and that a few days since chills had set in and the child was very sick. I told him that the child in all probability had a thrombosis of the lateral sinus and that its condition was a very critical one. The doctor succeeded in sending the patient to Grace Hospital the next day.

Examination.—I saw the girl for the first time Sunday, January 19 at 4 p. m. The temperature was 103.2 F., pulse 144, respiration 28, the mother reported a chill at noon and one during the night.

Operation.—I operated immediately, performing a radical operation on the left side and exposing the lateral sinus freely. I removed the thrombus, reaching almost to the jugular bulb, until free hemorrhage occurred from below. Large masses of thrombotic material were removed also towards the torcular Herophili but there was practically no hemorrhage. Saline solution was administered hypodermically and by rectum.

Postoperative History.—January 20. Chill at 9 a. m., at 10 a. m. the temperature was 104.8 F., at 11.50 a. m., 104.6 F. At 9 p. m. temperature was 97.2 F., pulse 92. Urine examination: Color yellow, sediment none, reaction acid, appearances turbid, specific gravity 1020, albumin absent, sugar absent, epithelium, few squamous, crystals of uric acid.

January 21. Slept well until after midnight, cried at times with pain in the ear. At 7.45 a. m. temperature rose to 105 F., at 10 a. m. chill, appetite reported as good. At 5 p. m. temperature 98.8 F., at midnight 97.2 F., had a fair day.

January 22. At 5 a. m. temperature 97.4 F., at 9, 97.8 F., at 12 m., 98.2 F., at 6 p. m., 101. A fair day.

January 23. Had a good night, appetite good. At 5 a. m., temperature 97.6 F., at 12 m., temperature 98 F., at 8 p. m., 100 F. Passed a good day.

January 24. Slept at intervals, appetite poor, at 5 p. m., temperature 103.2 F., at 6 p. m. temperature 99.2 F.

January 25. Good night, at 6 a. m. temperature 100 F., appetite good, at 9 a. m. temperature 100.6 F., at 11.30 a. m., 104 F., at 12.45 p. m., 99 F., at 3 p. m., 100.8 F., at 5 p. m., 98.4 F.

January 26. Had a fair night, complained of headache in the morning. At 5 a. m., temperature 99.4 F., at 6 a. m., temperature 104 F., severe chill, delirious, at 9 a. m. temperature 99.4 F., at 2.30 p. m., 98 F., at 6 p. m., 97.6 F., appetite fair to good.

January 27. Restless all night. At 6 a. m. temperature 105.8 F., severe chill, delirious, at 8 a. m. temperature 101.6 F., at 11 a. m. patient was taken to operating room and examined, wound at posterior cranial fossa looked grayish, offensive odor, cleaned. Appetite fair to good. At 3 p. m. temperature 102 F., slight chill. At 5 p. m. temperature 104.6 F., pulse 160, refused supper, did not like the light, complained of pain in left temple.

January 28. Had a good night, at 5 a. m., temperature 99 F., at 9.30 a. m., 100.6 F., appetite fair.

Second Operation.—January 28, at noon I operated again. First I tied the internal jugular vein. It was filled with blood. I opened the middle cranial fossa and evacuated about two drams of not offensive yellowish green pus which seemed to have been liberated from a well defined, apparently clean cavity. The patient received about 6 ounces of physiologic saline solution hypodermically during the operation and saline solution per rectum for one hour after the operation. The child left the operating room with a good pulse although about 125. At 3 p. m. the temperature was 104.2, comfortable since the operation. At 5 p. m. temperature 100.4, at 11, 98.2.

Postoperative History.—January 29. Had a good night, at 5 a. m. temperature 98 F., at 10 a. m., 97.8 F., at 2 p. m.,

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* Read in the Section on Laryngology and Otology of the American Medical Association at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

98.9 F.; at 5 p. m., 99.4 F.; at 10 p. m., 100 F. Passed a good day.

January 30: Good night; appetite good. At 5 a. m., temperature 99 F.; at 2:30 p. m., 104.6 F.; at 5 p. m., 103.2 F.; at 7 p. m., 97.8 F.; at 9 p. m. (by rectum), 98.2 F. A poor day.

January 31: Slept well all night; quite rational; appetite fair. At 6 a. m., temperature 98 F.; at 8 a. m., 100 F.; at 3 p. m., 96.6 F.; at 6 p. m., 97.2 F.

February 1: Slept well all night; at 6 a. m., temperature 98 F.; at 11 a. m. (axilla), 96.8 F.; at 2 p. m., 98 F.; at 8 p. m., 98.2 F.: at 12 midnight (axilla), 97.8 F. A fairly comfortable day.

February 2: At 6 a. m., temperature 98 F.; complained of a great deal of pain in the head: comfortable after 1/10 gr. morphin had been given hypodermically. At 1 p. m., vomited; at 2 p. m., temperature 99.4 F.; at 3 p. m., nauseated; at 7 p. m., temperature 101.4 F.; at 11 p. m. (axilla), 98.6 F. A poor day.

February 3: A fair night; vomited at 3 a. m.; temperature 100.8 F.; at 6 a. m., 98.2 F.; at 1:15 p. m., 98 F.; at 6 p. m., 99.2 F.; temperature taken each time by axilla

February 4: The child was in an almost comatose condition. At 2 a. m. axillary temperature 99.4 F., pulse 84. Between 6 a. m. and noon repeated spasms; temperature at 9 a. m., 99.3 F., pulse 82; at noon, 99.4 F., pulse 82; at 1 p. m. (by rectum), 100 F.; at 5 p. m. (by rectum), 99.4 F.; at 9 p. m. (axilla), 99.4 F. A poor day. While dressing the wound the absence of discharge was noticed. I thought there must be some retention of pus and explored the wound with a dressing forceps, evacuating a large quantity of foul smelling pus. It now became apparent to me that I had opened a deep seated abscess. The child to our surprise immediately showed signs of somewhat improved mental activity. One of the gentlemen present made the remark that the child's comatose condition was changed into a semi-comatose condition.

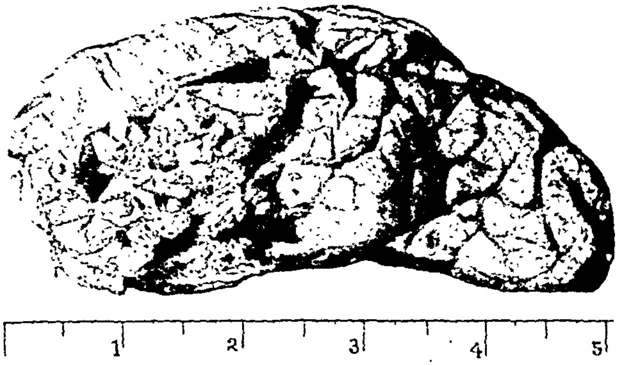

Fig. 1.—Case of cerebral abscess; about ⅔ of left half of cerebrum, seen from below.

February 5: At 1 a. m. temperature (axilla), 100.8 F.; pulse 96; at 6 a. m. (axilla), 101.2 F., pulse 104; at 11 (axilla), 100 F., pulse 96; at 12 patient had a convulsion; at 1:30 p. m. (axilla), 104.4 F., pulse 120; at 4 p. m. (axilla), 106.4 F., pulse 120; at 4:30 p. m. (rectum), 107.6, pulse 142; at 5 p. m. (rectum), 108 F., pulse 160. The temperature kept on rising. At 6:45 p. m. the child died.

We had before us a child suffering from chronic middle-ear suppuration, which in a course of 11 or 12 years had gradually extended into the surrounding tissues. Four distinct pathologic features were present:

1. A chronic suppurative tympano-mastoiditis.
2. An abscess in the region of the dura on the roof of the antrum, being in all probability extra- and intradural.
3. An extended lateral sinus thrombosis.
4. An old deep-seated brain abscess.

While the three first-named conditions were more readily recognized, either by their clinical symptoms or by the findings during surgical interference, the last was somewhat less plain. A severe attack of pain in the head which occurred in my absence one night between 10 p. m. and 1 a. m., and after which the child's condition appeared to change suddenly, seemed to mark the turn for the worse. I might emphasize in this case the repeated attacks of violent pain in the head. Long before, the child had asked her mother why her head should ache when she blew her nose.

I remember having heard of a medical student in a German university who told his associates that he was suffering from an affection of the brain; I do not recollect whether an abscess or a tumor. His friends regarded him as a hypochondriac and teased him. He died, and his assertion was regarded as correct. I admit that our case presented some features which were not interpreted correctly and in time on account of the complexity of the affection. The autopsy was confined to the calvarium alone. The principal findings in the autopsy were pachymeningitis externa, a small thrombus about 1 cm. in length about half way between the knee of the lateral sinus and the torcular Herophili, edema of the brain, an old abscess in the left cerebrum adjacent to the ventricle, showing a capsule, with apparently a rupture into the ventricle. The location of the deep-seated abscess was, of course, a very dangerous one, being directly adjacent to the ventricle.

Dr. G. P. Myers, pathologist to Grace Hospital, reported examination of pus smear January 24: Staphylococcus, *Diplococcus pneumoniæ* and an unknown bacillus. At autopsy, culture No. 1 of rest of thrombus. No. 2 of meninges near opening by operation. No. 3 of right middle ear. Nos. 1 and 2 heavy growth, pneumococcus and colon bacillus. No. 3, very scant growth of same bacteria. No. 3 unreliable because same chisel used to open calvarium used to open right ear.

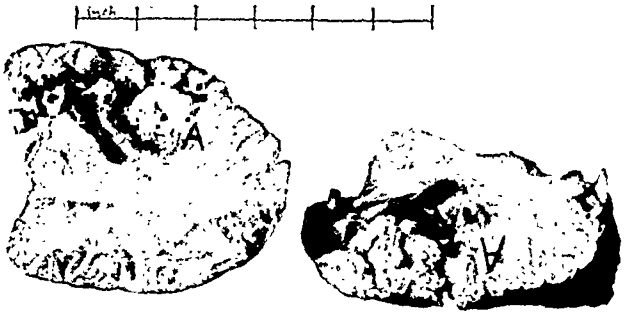

Fig. 2.—The cerebrum (A) cut at an angle of about 45 degrees; the portion marked with an inverted A shows the cerebrum in practically its normal position.

270 Woodward Avenue.

EXPERIMENTAL PAROTITIS.*

ISABELLA C. HERB, M.D.
CHICAGO.

The most noteworthy study of the bacteriology of mumps is by Laveran and Catrin,[1] who in 1893 described a diplococcus in the exudate which they obtained by aspiration of the parotid gland. They found this diplococcus 67 times in 92 cases; 39 times the organism was obtained in pure culture, twice in mixed culture, and 15 times the result was negative. The 15 negative results they attributed to the small quantity of exudate obtained. In 16 cases of secondary orchitis pure culture was obtained 12 times, once with contamination and three times they obtained no growth. The organism was obtained from the blood during the height of the fever 10 times in 15 examinations. Three times pure cultures were obtained from the edema of the overlying tissue of the gland and once from the exudate of a joint. They found it fatal in large doses to white mice. Injections into the testicle produced an inflammation which lasted about eight days.

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* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

*From the Pathological Laboratory of Rush Medical College and the Memorial Institute for Infectious Diseases, Chicago. This work was aided by a grant from the American Medical Association.

[1] Compt. rend. Soc. de biol., 1893, v. 528.

In 1896 Mecray and Walch[2] examined the saliva from Steno's duct in 10 cases. They found a diplococcus 6 times. In 8 blood examinations they obtained the organism in pure culture 3 times, mixed with the white staphylococcus 3 times, and twice their results were negative. In 1896 Busquet and Feri examined the blood and saliva in 3 convalescents and in 17 patients during the early stages of the disease and found a diplococcus in all the cases.

In 1897 Michaelis and Biem[3] examined the secretion from Steno's duct in 16 cases and obtained pure cultures of a diplo-strepto-coccus in all. Their animal experiments gave negative results.

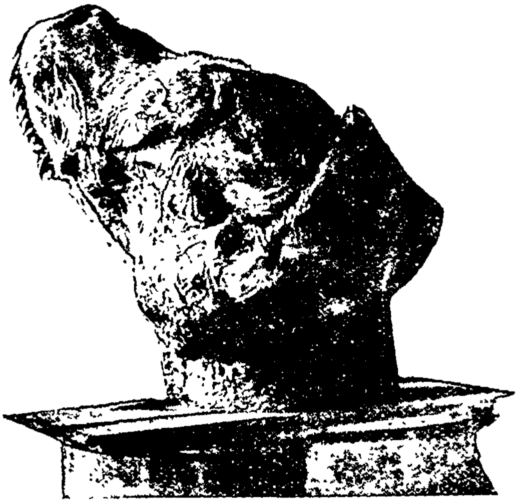

Fig. 1.—Uniform enlargement of the left parotid gland of a dog on the fourth day after inoculation of the diplococcus into Steno's duct. The skin and muscles have been removed.

In 1906 Teissier and Esmein[4] examined the blood in 45 cases and obtained a diplococcus in 37. The negative results were in those with a light attack of the disease or during convalescence. The organism was obtained 33 times in pure culture, twice with streptococci, twice with a bacillus and 3 times with a coccobacillus. The exudate from Steno's duct showed in 10 examinations 9 pure cultures. The coccus was fatal to guinea pigs and rabbits. Following intraperitoneal inoculations an orchitis developed in 4 of 7 rabbits. In 1907 Korentschewsky[5] isolated a diplococcus from the gland exudate in 21 of 29 cases. His blood examinations gave positive results in 8 of 32 cases. The organism was fatal to mice, guinea pigs and rabbits in large doses. No results were obtained in dogs.

So far as may be judged from the description of the investigators I have cited it appears very probable that they have dealt with the same diplococcus.

I obtained a similar diplococcus from the body of a man about 40 years old who entered the hospital in a moribund condition and died in a few hours. Except the report that he had had mumps no history was obtained. The postmortem by Dr. LeCount showed a right suppurative parotitis, bronchopneumonia and several minor lesions.

The cerebrospinal, pleuritic and pericardial fluids, bile, spleen, lung, testicle and right parotid gland were examined bacteriologically. Cover glass preparations from the bile, pericardial and cerebrospinal fluids showed a rather large diplococcus; the latter also contained a smaller coccus occurring in groups. The pleuritic fluid contained a short bacillus. They were both Gram positive. The *Proteus vulgaris* was isolated from the pleuritic, cerebrospinal and pericardial fluids, the spleen, lung, testicle and parotid gland; the *Staphylococcus albus* from the lung, testicle, cerebrospinal fluid and parotid gland. From the lung, testicle, cerebrospinal and pericardial fluids, bile and parotid gland a coccus was isolated with the following characteristics:

The coccus appears most frequently as a diplococcus, occasionally in chains of 4 to 6 elements, or in small groups. It is round and measures from .5 to .8 microns when about 24 hours old. When several days old it measures from .6 to 1.5 microns. It is easily stained by all the ordinary anilin dyes and is Gram positive. It grows equally well aerobically and anaerobically. It is not motile, has no capsule or flagella and does not form spores, gas or indol. It grows best in a temperature of 37 C. A temperature of 50 C. for three minutes destroys growth, cold inhibits but does not prevent growth when the culture is again placed under favorable conditions. Colonies developed from a milk culture two months old and from agar which was dried till it was broken. While the coccus develops on all the ordinary media, its growth is characteristically slow, the colonies on a 24-hour glycerin agar culture being scarcely visible. I have found by mixing sterilized saliva with agar, as in making blood agar, that an abundant growth is obtained in from 12 to 24 hours. Ascitic agar is also a good medium.

The organism is fatal to white mice, white rats, guinea pigs and rabbits when injected subcutaneously or intraperitoneally. The animals usually die within 24 hours of peritonitis. Those that survive for several days die of bacteriemia. The growth from a 48-hour agar slant suspended in 1 c.c. normal salt solution injected into the testis of rabbits produces an acute inflammatory condition which lasts for 7 to 10 days and then disappears without suppuration, the structure later appearing perfectly normal. On the other hand, animals similarly inoculated with staphylococcus and streptococcus die of peritonitis within 20 hours, while an injection of normal salt solution alone produces no reaction.

The following experiment was made on a medium-sized so-called white-faced ringtail monkey. On February 7, the animal, whose temperature was 100.8 F., was inoculated through the right Steno's duct with the culture from a 48-hour ascitic agar slant suspended in 1 c.c. normal salt solution

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[2] Med. Rec., 1896, 1, 440.
[3] Verhandl. XV Congr. f. Inn. Med., 1897, 15, p. 441.
[4] Compt. rend. Soc. de biol., 1906, lx, 803, 853, 897.
[5] Centralbl. f. Bakteriol., part 1, 1907, xliv, 394.

February 8, temperature 103 F.; slight swelling of the parotid; refuses food.

February 9, temperature 103.2 F.; decided enlargement of the parotid; chews with difficulty, but does not appear sick.

February 10, temperature 101.8 F.; parotid about as it was yesterday; less difficulty in chewing; appetite good.

February 11, temperature 101.2 F.; parotid smaller than yesterday.

February 12, temperature 100.8 F.; swelling of parotid gradually disappearing.

February 13, temperature 100.2 F.; swelling of parotid gradually disappearing.

February 14, temperature 100.2 F.; parotid appears of normal size.

Most of my experiments have been on dogs. These animals seem to react in a characteristic manner to the introduction of the coccus into the parotid gland, while subcutaneous and intraperitoneal inoculations produce no results. Direct inoculation into the parotid gland of dogs causes a swelling of the gland, lasting for 7 to 10 days. The injection of suspensions into Steno's duct produces in dogs a uniform swelling of the parotid gland which begins in from 48 to 72 hours, the gland continuing to enlarge for a few days, when it gradually returns to the normal size. In these animals the temperature during the period of the swelling of the gland ranges from 1 to 1.5 F. above normal; in no case did suppuration develop, and with the exception of difficulty in chewing for a day or two the animals appear to suffer no special inconvenience.

Injections into the duct of mixed cultures of the organism and staphylococcus causes edema of that side of the face and the parotid gland in 3 or 4 hours and abscesses form in 3 or 4 days. In two dogs that survived these injections after drainage of the abscesses the parotid gland was completely destroyed. One dog died on the fifth day of bacteriemia, another developed lung abscesses and died on the twenty-third day.

The following record of a single experimental inoculation of the diplococcus into Steno's duct in the dog illustrates well the changes thus produced in this animal:

February 24.—Small, young, black and white dog. Temperature, 102.5 F. Inoculated into the left Steno's duct with the bacteria from two 48 hours saliva agar slants suspended in 3 c.c. broth.

February 25.—Temperature, 102.5 F. No visible enlargement.

February 26.—Temperature, 103 F. Parotid enlarged. Dog whines when firm pressure is made over the gland.

February 27.—Temperature, 103.5 F. Parotid evenly enlarged and hard. Dog does not act ill, is playful and hungry, but experiences difficulty in chewing.

February 28.—Temperature 102.8 F. Gland about as it was yesterday. Pure cultures of the organism injected developed from aspirated fluid.

March 2.—Temperature 102.5 F. Swelling gradually disappearing.

March 5.—Temperature 102.5 F. Almost no enlargement of the gland.

March 6.—Temperature 102.5 F. Gland appears normal.

Macroscopically, the enlarged parotid gland of inoculated dogs is of uniform firm consistence, the enlargement often reaching many times the size of the normal gland, and the cut surface is pinkish, exuding a slight amount of pinkish, rather turbid fluid. The neighboring lymph nodes are moderately swollen, but there are no gross changes in other parts of the body.

Microscopic examination of the parotid gland at the height of the enlargement shows a uniform infiltration of the tissue with plasma cells, small and large mononuclear cells, and polymorphonuclear leucocytes, the ducts being packed with cells. This infiltration begins in the interacinous tissue.

Examinations of the blood of the inoculated dogs shows a distinct leucocytosis, the increase being largely in the mononuclears.

Shortly after injection of the diplococcus into the parotid gland, the opsonic index of the serum of the injected animal begins to rise, reaching the highest point, about three, on about the fourth day, returning to normal gradually. So far as my observations go, a similar rise in the opsonic index with respect to the diplococcus occurs in human mumps, but many further observations are necessary before final statements may be permitted. Work along these and other lines, including the anatomic changes in the inoculated dog, is now in progress.

CONCLUSIONS.

From a case of mumps a diplococcus was isolated which corresponds in its essential characteristics to the organism obtained from mumps by Laveran and Catrin, Mecray and Walch, and the other investigators cited. Inoculations of suspensions of the diplococcus into Steno's duct in the monkey and in the dog produce an acute, uniform enlargement of the parotid gland accompanied with some slight fever. In the dog this enlargement is the result of an infiltration that consists largely of mononuclear cells, and is accompanied with a general increase in the mononuclear cells in the blood as well as a distinct rise in the opsonic index with respect to the diplococcus. Further studies, especially of the changes and reactions in human mumps, are necessary before it can be said whether or not this diplococcus is the specific cause of mumps.

Clinical Notes

THREE CASES OF IMPERFORATE ANUS WITH RECTOVAGINAL FISTULA.

H. J. WHITACRE, B.S., M.D.
CINCINNATI.

It has been my good fortune to see during the past five years three very unusual congenital defects of the rectum the reports of which cases are appended. The defect in these cases consists in a partial failure of development in the fetal septum which divides the cloaca into a posterior rectal portion and an anterior genitourinary portion. The defect is well illustrated in Figures 1 and 2.

Case 1.—*History.*—C. K., aged 8 months, well-developed female child was sent to me by Dr. Allyn C. Poole of Cincinnati for the operative treatment of a defect of the rectum which had existed since birth. This little patient suffered great inconvenience from this defect. The bowels could be moved only with great difficulty and she often suffered much abdominal pain. Furthermore, there was a constant irritation about the genitalia because of the discharge of stool through the vagina. This irritation had been kept under fairly good control by the mother. The bowels had at all times moved voluntarily, however, and there had been no incontinence.

Examination.—The patient is well developed and well nourished, having the usual amount of adipose tissue for a child of this age. The head, chest and abdomen present no evident abnormalities. On examination of the perineum there is no depression or other evidence of an anus. On separating the labia and opening the vagina an opening into the rectum is found just within the fourchette. This opening is about one-fourth inch in diameter, is pliable and can be dilated. The mucous membrane of the rectum unites and becomes continuous with that of the vagina, with no pouting of the rectal mucosa. While the opening does not seize the finger as does the normal anal sphincter, a sensation of a definite tone is communicated to the examining finger. A curved sound introduced into the rectal opening demonstrates a pouching of the rectum backward, so that there does not seem to be much tissue between the skin at the normal site of the anus and the interior of the bowel. The vagina and the urethra are normal in their anatomic structure and arrangement.

First Operation.—This was performed under ether anesthesia. In view of the fact that the rectum seemed so near to the skin at the usual site of the anus, it was deemed feasible to make an opening here and close the vaginal fistula by suture. Accordingly, a three-fourths inch incision was made through the skin into the rectum and the mucosa sutured to the skin by interrupted catgut sutures. A circular incision was then made around the fistulous opening into the vagina, and the edges were turned into the rectum by interrupted suture tied in the rectum. After a few days, and in spite of irrigation of the rectum to prevent accumulation, the fistulous opening into the vagina reopened. The tube was now removed from the rectum. Within a suprisingly short time the incision in the perineum closed completely and all stool was again discharged through the vagina. Three weeks later a second operation based on a more rational and correct technic was performed.

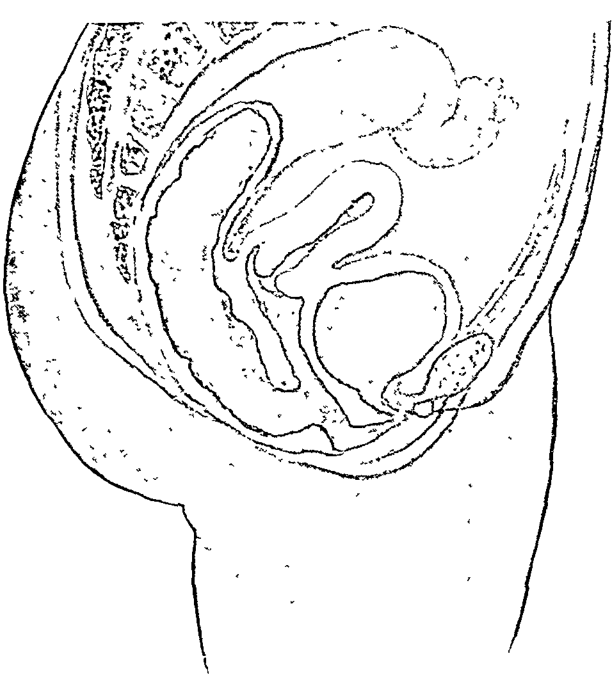

Fig. 1.—Imperforate anus with rectovaginal fistula. Saggital view of the conditon.

Second Operation.—This also was done under ether anesthesia. An incision was made in the median line from the lower border of the fistulous opening almost to the coccyx. This incision extended down to the rectal wall throughout its extent. A circular incision was now made around the fistula and the rectum was dissected free from the vagina in front and from the tissues laterally until it presented the appearance shown in Figure 3. Previous experience had demonstrated the fact that the fistulous opening in the vagina was in reality the lower end of the rectal tube, and that there was a certain amount of sphincteric action present, so it seemed rational to suppose that a functional result could be obtained by displacing this opening backward to the normal site of the anus. When the dissection had been carried backward sufficiently to allow this opening to be placed in the desired position at the posterior extremity of the median incision, the mucosa of the bowel was sutured to the skin by interrupted chromic gut sutures. The space between the vagina and this new location of the anus was now closed by suture in a manner entirely analogous to that used in perineorrhaphy and shown in Figures 4 and 5. Figure 4 is not entirely correct. It should show the sutures passing through the loose peri-rectal tissues in the bottom of the wound—just enough to prevent dead space. The closure of the wound in this way gives a perineal body of considerable size and solidity. The bowels were moved on the fourth day and all stitches held. The result was complete at the end of two weeks' time, the bowels were moving daily, without incontinence, and have continued to act in a perfectly normal manner for the past five years. The perineum of this child is somewhat more depressed than is normal, yet it has a normal appearance on inspection. The anal opening is of sufficient diameter, the vagina is normal in its appearance and capacity and the perineal body has remained fairly satisfactory in size. The child is now a fine looking girl 6 years of age.

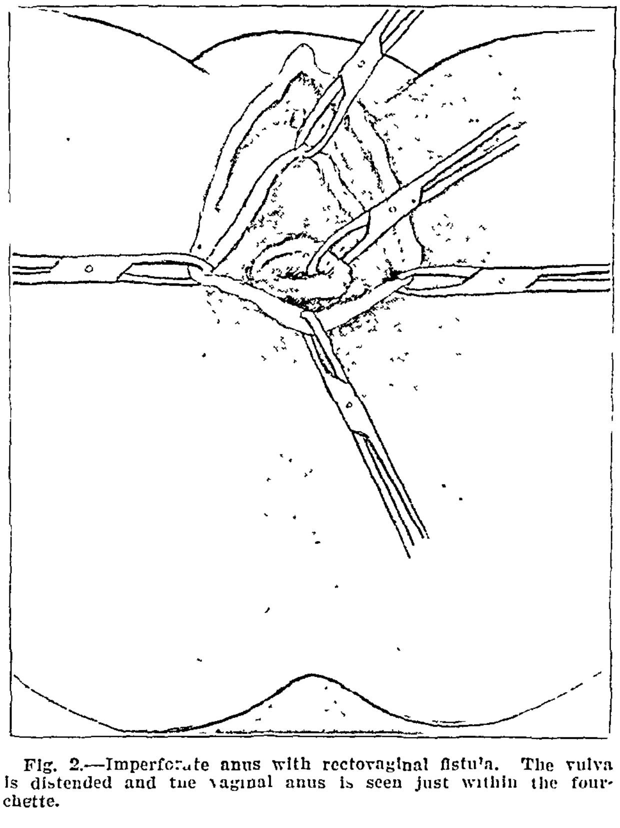

Fig. 2.—Imperforate anus with rectovaginal fistula. The vulva is distended and the vaginal anus is seen just within the fourchette.

CASE 2.—*History.*—A. K., aged 5, was admitted to Christ Hospital, Nov. 27, 1906, and discharged Dec. 18, 1906. This patient was referred to me in consultation and for operation by Dr. F. C. Theiss of Cincinnati. She was a healthy, well-developed child, who gave no history of serious illness.

Examination.—Nothing abnormal is to be seen except the congenital defect in the rectum and vagina. On inspection of the perineal region there is absolutely no marking at the usual site of the anus. The vulva is apparently normal in appearance on the outside. The vagina shows an opening on its posterior wall about one-fourth inch in diameter and one-fourth inch back of the fourchette. This opening seems to correspond to the termination of the rectum. There does not seem to be the same considerable pouching of the rectum posteriorly that was found in Case 1. This abnormal opening shows evidence of some sphincteric action, and there is no pouting of the mucous membrane in the rectum.

Operation.—On Nov. 28, 1906, under nitrous oxid, ether anesthesia, an operation, precisely similar in every detail to that done in Case 1, was performed. The primary result was again very satisfactory, the patient endured the operation well and recovery was prompt. She suffered some difficulty in movement of the bowels for a period of three or four days, about ten days after operation, but this was temporary and did not recur

Postoperative History—During the past thirteen months the patient has been perfectly well, has suffered no incontinence, even when the bowels were loose, and has been attending school since Sept 1, 1907 She was recently presented to the Cincinnati Obstetric Society, and it was agreed by the members present that the anus was in a satisfactory position, that the mucocutaneous junction was satisfactory, that the perineal body was of sufficient size and solidity, and that the vagina presented a fairly normal appearance. I believe that both patients will be able to satisfactorily perform the functions of wife and mother.

Case 3 —*History.*—This patient a new born baby was seen eight months ago with Dr Neufarth of Mt Healthy, Ohio. The child presented precisely the same lesion that has been described in the other two cases Inasmuch as the stool was discharged satisfactorily and the irritation was kept fairly under control, it was deemed wise to postpone operation until the child was older. When the proper time has arrived I shall perform the operation that has been described.

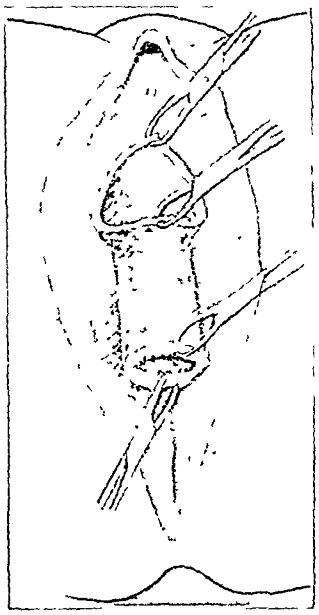

Figure 3

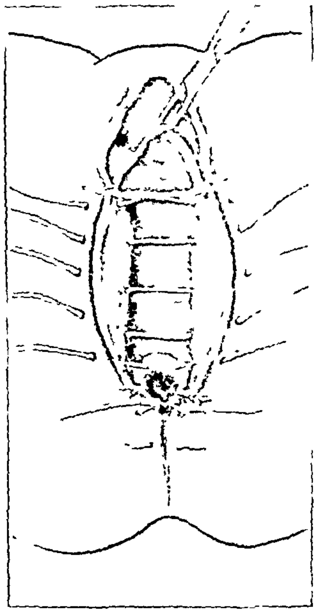

Figure 4.

Fig 3 —An incision has been made in the median line extending down to the rectal wall; a circular incision has been made around the fistula and the rectum has been dissected free from the vagina in front and from the tissues laterally

Fig 4 —Showing the mucosa of the bowel sutured to the skin and the space between the vagina and the new location of the anus closed as in a perineorraphy

RARITY OF THE CONDITION.

I am prompted to report these cases by the rarity of the condition and by the seemingly insufficient presentation of this subject by the text-books. That the condition is a rare one is shown by the fact that in 1894 not more than sixty cases were found on record by Buckmaster.[1] The rarity is further shown by the fact that in 16,000 cases of obstetrics occurring under Collins at the Rotunda Hospital one case of vaginal anus is noted. Bednar saw but one case in 7,154 girls in his foundling asylum, while Winckel does not recall a single case among 12,000 children who were under his care while director of the Dresden Hospital (Buckmaster). Furthermore, my own experience corresponds with that of Buckmaster, who states that inquiry made among a large number of physicians having extensive practices reveals no cases of this sort. My experience of encountering three cases of this variety within a period of five years is unusual.

A noteworthy fact brought out by a study of collected case reports is that very few successful cases are reported later than a few weeks or months after the operation. A large number of the cases reported are of patients who were not operated on. The failures after operation are to be explained by the fact that all of the earlier operations consisted in simply making an incision down to the rectum at the normal site of the anus and suturing the mucosa to the skin. If the rectum could not be brought down to the skin the wound was packed and this channel was kept open by persistent dilatation. The vaginal opening was either closed by suture or left to close spontaneously.

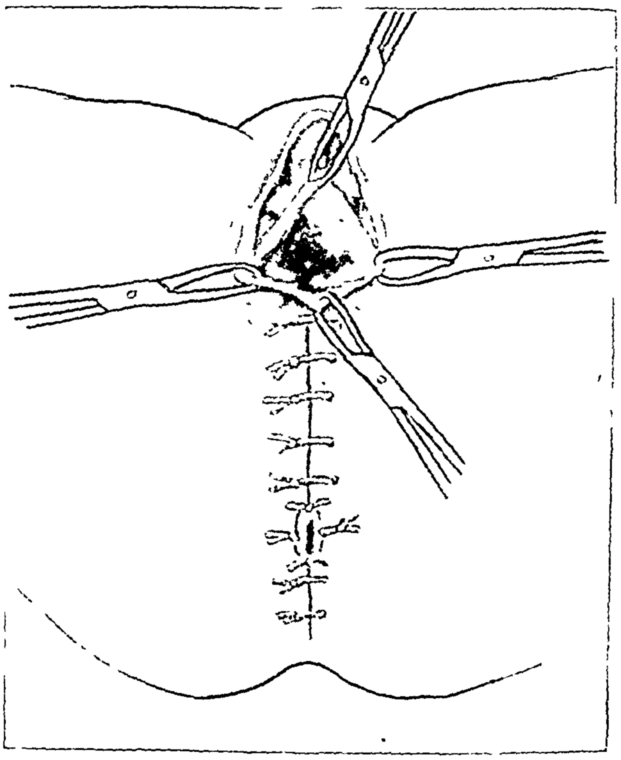

Fig 5 —Completed operation showing new anus.

M. Vicq d'Azyr suggested the division of all tissue posterior to the vaginal opening as far as the normal site of the anus. This suggestion was put into practice by Rhea Barton of Philadelphia. Professor Dieffenbach (1826) made an important step in the evolution of the operation when he made a dissection of the rectum and drew it down to the skin and then repaired the perineum by a later operation. He did not dissect out the vaginal opening, however.

Rizzoli performed and described an operation in 1871 which is practically the same that the author has used. Buckmaster[1] has described an operation which is somewhat more complicated and is adapted to cases in which the opening is higher up and incontinence of feces is present. He provides sphincteric action by drawing the bowel through the separated fibers of the levator ani.

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[1] N Y. Med Jour., Aug 11, 1894

Dr. Paul Puech (Paris, 1890) has collected all reported cases of this type of imperforate anus, has discussed the subject at length in a monograph and has given a complete bibliographic reference list.

SUMMARY OF THE TECHNIC.

The lesion has been so uniform in the three cases that have been reported that in each case a typical operation was applicable. I consider that the important points in the technic are:

1. An appreciation of the fact that in my cases the vaginal opening was apparently the termination of the bowel.
2. That this fistulous opening into the intestine was supplied with the usual or a sort of sphincteric muscle which was entirely efficient in the new location.
3. The vaginal opening should be carefully preserved by a circular incision made around it.
4. A dissection of the rectum should be made sufficient to permit the bowel opening to be displaced to about the normal position of the anus, and this dissection should be conducted in a manner which will not too seriously interfere with the nutrition of the rectum.
5. The perineum and vagina are to be closed in front by sutures in a manner exactly similar to that followed in an ordinary perineorrhaphy.
6. The bowels should be managed as in an ordinary case of perineorrhaphy.

22 West Seventh Street.

A DEVICE FOR FACILITATING TEST-MEAL REMOVAL AND GASTRIC LAVAGE.[*]

F. J. DEVER, M.D.

AND

F. A. FAUGHT, MD.

Assistants to the Professor of Clinical Medicine, Medico Chirurgical College and Hospital.
PHILADELPHIA.

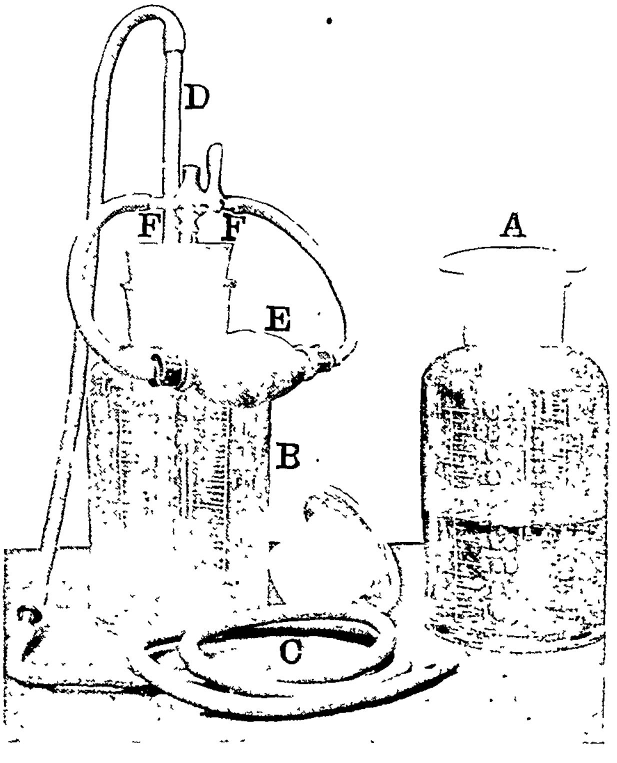
Some years ago Professor Judson Daland adopted, for the purpose of facilitating gastric lavage and test-meal removal, two large open-mouth bottles of more than a liter capacity, a plain gastric tube and a double action Davidson bulb. With this arrangement, aided by an assistant, it was possible to obtain a sample of gastric contents in considerably less than a minute and to immediately follow this procedure with lavage and inflation if desired. This arrangement while marking a distinct advance over other methods in common use, has the decided drawback that its employment required the attendance of an assistant; the complicated nature of the apparatus requiring a second pair of hands to manage bottles and change tube connections during the passage of the tube.

To overcome this difficulty and to render this method more universal in its employment we have devised the reversing valve about to be described. This device is simple in its manipulation, easy to keep clean and in repair, and in practice does away entirely with the necessity for assistance.

Besides the reversing valve (F,F) the following components are required: 1, A plain gastric tube (C) without bulb or funnel; 2, a double-action Davidson hand bulb (E); 3, a large rubber stopper having two perforations; 4, two wide-mouth bottles (A and B) of more than a liter capacity each and graduated in fractions of a liter;[1] 5, a short length of glass tubing (D) and some quarter-inch tubing. The stomach tube should be of relatively large diameter ($\frac{1}{2}$ to $\frac{5}{8}$ inch) and should be provided with both a terminal and lateral openings in the gastric end. Such a tube is easier of insertion, less annoying to the patient, and greatly increases the chances of obtaining a sufficient sample without difficulty.

TECHNIC.

Fill one graduated bottle (A) to the 500 c.c. mark with warm sterile water. Fit the double-perforated stopper with the reversing valve and with the glass tube. Place the stopper firmly in the empty bottle (B) and attach the gastric tube (C) to the glass tube (D) and the two ends of the double-action bulb (E) to the horizontal tubes of the reversing valve (F,F). Finally, ascertain the direction of the air current through the valve by making a few pressures on the bulb. Set the valve to make negative pressure within the bottle.



Apparatus for facilitating test-meal removal and gastric lavage. A, bottle of at least 1 liter capacity graduated in c. c., to hold sterile water; B, bottle similar to A, to which aspirating apparatus is attached; C, plain gastric tube without bulb or funnel; D, glass tubing to which is attached the gastric tube and which goes well down into bottle B; E, Davidson hand bulb for producing either negative or positive pressure in bottle B; F, F, reversing valve by which the direction of the air current is changed so as to produce either negative or positive pressure within bottle B and therefore (when in use) within the stomach.

These preliminaries completed, the tube should be passed with the patient preferably in the sitting posture. As soon as the tube enters the cardiac extremity a few quick pressures are made on the bulb, this will develop a slight degree of negative pressure within the bottle when the gastric contents will immediately flow up through the tube. Sudden stopping of the flow from occlusion of the tube by particles of food or mucus may immediately be removed by momentarily reversing the lever of the valve. This will cause a small portion of the gastric contents to return through the tube, effectually washing out the obstruction. This simple maneuver may be repeated as frequently as necessary to obtain a sufficient specimen.

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[*] Demonstrated before the Philadelphia County Medical Society, June 10, 1908. From the Laboratory of the Department of Clinical Medicine, Medico Chirurgical College, Philadelphia.

[1] These special bottles are not necessary for practical results, as any large open-mouth bottle of sufficient capacity, such as a quart milk bottle, may be substituted. In this event a line around the bottle must be made at the measured 500 c. c. mark.

In the event of failure to obtain sufficient material by this means, the difficulty will usually be overcome by the introduction of a measured amount of water. To accomplish this the stopper with all its connections is removed from the bottle (B) and fitted into bottle (A) containing the 500 c.c. of warm water. The valve is set to make positive pressure within the bottle, then by means of the bulb about 400 c.c. are run into the stomach. The valve is then reversed and by further compression of the bulb the fluid is withdrawn. It is *necessary to recover more than the amount introduced if* any determinations of a quantitative nature are to be made. After removal of the test-meal, by either of the above methods, the apparatus is immediately ready for inflation or lavage.

INFLATION.

To inflate, after outlining the stomach by auscultatory percussion, the stopper is transferred to the empty bottle and the valve set for compression. A few pressures on the bulb will put sufficient air into the stomach to alter the percussion note without ballooning it sufficiently to alter its position or relation to adjacent viscera. By alternately inflating and deflating it is possible to differentiate absolutely gastric from colonic tympany.

LAVAGE.

To perform lavage or to introduce a quantity of mildly alkaline water it is only necessary to repeat the above procedure substituting water for air and then introducing and withdrawing this fluid until the final wash-water returns clear.

With this apparatus under average conditions it is possible to complete the process of removal in less than a minute from the time of introducing the tube, while the whole process as outlined should not occupy more than three or four minutes. As the operator becomes more familiar with the technic the required time naturally becomes less.

GONORRHEAL ARTHRITIS TREATED WITH ANTIGONOCOCCIC SERUM.

W. C. GAYLER, M.D.
ST. LOUIS.

The following case is of interest because of the prompt and decided relief following the injection of the antigonococcic serum:

History.—Miss N., aged 19, a stenographer, came to me May 30, 1908, with copious vaginal discharge, and frequent and painful micturition. She had pain but no swelling in the muscles of the right shoulder. She had intense pain and enlargement at the articulation of the first and second phalangeal bones of the index finger of the left hand. The mucopus from the cervix and the expressed pus from the urethra each contained large quantities of gonococci.

Treatment.—The urethra was irrigated daily with a 2 per cent. protargol solution, and the endocervix received a daily application of 6 per cent. protargol, after the surface had been cleaned. The urethral discharge stopped almost at once, and the cervix showed some improvement. For five weeks the finger grew steadily worse. Local applications were of absolutely no help. Internal remedies, including opiates, gave not even temporary relief. The finger was twice its normal size, red, and so painful that the slightest touch would produce a cry of pain from the patient, who is a strong-minded, intelligent woman. On July 7, 2 c.c. of antigonococcic serum, as prepared from ram's blood by Drs. Rogers and Torrey, was injected into the right arm. Within forty-eight hours the swelling had gone down somewhat, giving the finger a shriveled appearance. There was less pain, and the joint could be manipulated without much discomfort. Three injections were made, at intervals of three days. Three days after the last injection the finger had almost returned to normal size. There was no pain when the finger was at rest, and only slight pain when the finger was manipulated. There is no doubt about the immense change for the better following the injections. The cervix, which was still involved at the time of the injection, did not seem to undergo any change as a result of this treatment. Gonococci were still present in small quantities three days after the injections, as they were before the first injection was made.

SOAP CONCRETIONS IN CHOLELITHIASIS.

GEORGE RICHTER, M.D.
ST. LOUIS.

Miss M. R., 40 years old, always healthy except occasional catarrhal conditions of the stomach (never had typhoid), fell sick with colicky pains. When an icteric color developed her friends advised her to take salad oil, of which she then swallowed about 750 c.c. from June 4 to June 6.

On June 19 I found her with an intense icteric color, circumscribed painful resistance in the region of the gall bladder, no fever; urine dark brown (bile pigments), free from albumin and glucose, but rich in indican. Calomel produced (June 22) an ample passage containing a large number of rounded white lumps, which, however, were not preserved. Again, on July 5, after an enema of 400 c.c. salad oil, she passed a quantity of large white lumps.

These soap concretions were delivered to me in a clean glass jar after they had been rinsed with water. They were 0.5 to 2 cm. in diameter and of the consistency of hard tallow (at a temperature of 23 C.).

I washed them with distilled water and dissolved about 2.5 grams in alcohol. After adding potassium hydrate I heated and saponified the solution, evaporated it and shook the bulky residue with absolute ether, which then was evaporated. No cholesterin was found.

After about five days I noticed that the white concretions in the jar had been disintegrated, a large layer of oil floating on top. Of this oil 10 c.c. were filtered off, saponified, and the solution evaporated, residue shaken with absolute ether and the ether extract with water. From the evaporated ether extract remained about 1 or 2 drops of a brown, tenacious fluid, too little for closer examination.

The substance on the filter (about 12 grams) was freed from fat with ether, exhausted with hot water and then with alcohol. To the filtrate from this sulphuric acid was added. There resulted 0.025 grams of fatty acids, showing that but very little soluble soaps had been present. On the filter remained about 0.3 grams of what appeared to be fecal matter.

Evidently the concretions passed by this patient had been either a highly concentrated emulsion from the salad oil by action of the intestinal (pancreatic) secretions, or they had been true soap, afterward split up into oil and alkali by the action of some ferment. It would seem more probable that the soap concretions are in reality thickened emulsions. Lack of fresh material prevented further investigation to decide the question.

The patient was operated on successfully by Dr. Francis Reder of St. Louis, July 18. About 200 gallstones, faceted and consisting of cholesterin, varying from the size of a cherrystone to that of a hazlenut, were found in the gall bladder, while the ducts were free.

Therapeutics

WARTS.

These common and troublesome excrescences belong to that class of epithelial tumors known as papillomata and are generally described as presenting four varieties, each of which is characterized by the variety of epithelium on which it is prone to appear. Verruca vulgaris, appearing on the skin; villous papillomata, on the mucous membrane of the bladder, pelvis of the kidney, and choroid plexuses of the cerebral ventricles; intracystic papillomata, on the inside of cysts of the mammary glands and ovaries; psammomata, on the pia mater of the brain and cord only where they are prone to calcification. The three latter varieties present many interesting anatomic peculiarities, the first variety, verruca vulgaris, the common every-day wart, has also several varieties of form, and as for varieties of treatment, they are legion and range from medieval incantation to the equally efficient proprietary nostrum.

Excepting the "anatomic wart" (verruca necrogenica), which is not a true papilloma but a tuberculous infection and confined to the back of the hand and fingers —small or large, pigmented or not, single or in groups, there is no part of the skin where they may not appear.

Anatomically, they consist of a base of hypertrophied connective tissue surmounted with an hypertrophy of the papillæ and rete Malpighii and covered with a thickened corneum, the whole change being accompanied with an increased blood supply.

Etiologically, they appear to follow a mild local irritation; beyond this their origin is uncertain.

Their occurrence is most frequent in children, they are less common during adolescence, and adults have them least, though not infrequently a predisposition to their formation seems to follow through life.

INTERNAL MEDICATION.

Occasionally they disappear as unaccountably as they appear, but generally some local application to remove them is necessary.

If the warts are numerous or there is a tendency for their reappearance internal medication is advisable at the same time. Arsenic in some form holds first place, perhaps best as:

For a child:

℞.	c.c.		
Liquoris potassii arsenitis	60	or	m. x
Aquæ cinnamomi	ad 150		ad fl℥v

M. et Sig.: A teaspoonful, in water, three times a day, after meals.

For an adult:

℞.	c.c.		
Liquoris potassii arsenitis	6	or	flʒiss
Aquæ cinnamomi	ad 150		ad fl℥v

M. et Sig.: A teaspoonful, in water, three times a day, after meals.

Epsom salt has also been used with success, as:

For a child:

℞.	gm. or c.c.		
Magnesii sulphatis	1	or	gr. xv
Aquæ	ad 150		fl℥v

M. et Sig.: A teaspoonful, in water, three times a day, after meals.

For an adult:

℞.	gm. or c.c.		
Magnesii sulphatis	25	or	ʒvi
Aquæ	ad 150		fl℥v

M. et S: A teaspoonful, in water, three times a day, after meals.

EXTERNAL APPLICATIONS.

℞.	gm. or c.c.		
Hydrargyri chloridi corrosivi	1	or	gr. xv
Collodii flexilis	25		flʒvi

M. et Sig.: Paint on the wart once a day.

Blakko's Ointment:

℞.	gm. or c.c.		
Potassii bichromatis	20	or	gr. iii
Petrolati	30		℥i

M. et Sig.: *Rub into the wart at night.*

Mantellin's Paint:

℞.	gm. or c.c.		
Chlorali hydrati	1		gr. xv
Acidi salicylici	4		ʒi
Acidi acetici	1	or	m. xv
Ætheris	5		flʒi
Collodii	15		fl℥ss

M. et Sig.: Paint on wart once a day.

From the *Bulletin Général de Thérapeutique,* Feb. 23, 1908:

℞.	gm. or c.c.		
Extracti cannabis indicæ	1		gr. xv
Acidi salicylici	2	or	ʒss
Collodii	40		flʒx

M. et Sig.: Paint on the wart once a day.

When none of these methods are successful there remains electrolysis, cauterization and curettage. Cauterization may be done with the actual cautery or one of the escharotics. Of the latter, nitric acid is generally the choice, a drop from a glass rod being placed on the wart, being careful not to touch the surrounding skin. This method, however, is not the one of choice, as it frequently results in an unnecessary amount of inflammation and frequently secondary infection.

Electrolysis is perhaps the most elegant method, but if the wart is so situated as to make cosmetic effect desirable it requires considerable experience and skill in the use of the electric needle.

Finally, curettage offers a speedy, certain and, if properly done, painless method of removal. The wart and surrounding skin are thoroughly scrubbed as for any other surgical procedure, and the wart and healthy skin about it for about one-fourth inch are then frozen with ethyl chlorid. A few strokes with a sharp curette will then remove the wart entire, and the resulting tiny wound may be dressed with a simple antiseptic, or perhaps just as well with a dry aseptic dressing.

ABORTIVE TREATMENT OF BOILS.

The *New York State Journal of Medicine,* December, 1907, quotes the following as effective in absolutely aborting a boil: The inflamed part should be thoroughly scrubbed with soap and water, then washed off with 50 per cent. alcohol, and then an alcohol compress should be applied to the part and allowed to remain until the alcohol has evaporated. The region is then again washed with soap and water and the suds allowed to dry on, no other dressing being applied. If there is no pus, a single treatment is said to abort the furuncle.

Four-Flap Method of Vessel Anastomosis.—The *Semana Medica,* July 2, 1908, publishes an illustrated description by A. Pirovano of his "four-flap method" of end-to-end anastomosis of vessels. He has applied it in suturing fifty vessels and states that it surpasses in strength and ease of execution all other methods of which he knows. The technic is readily seen from the illustrations, but he warns that the slits must be exactly in the longitudinal axis and exactly symmetrical. He calls it the *Procedimiento a cuatro colgajos.*

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[*For other information see second page following reading matter*]

SATURDAY, AUGUST 22, 1908

THE DEFENSE OF MEDICAL RESEARCH.

The address of Dr. Cannon on the opposition to medical research[1] is noteworthy in that it takes a line rather out of the ordinary in articles on this subject. We are accustomed to find such articles directed toward an investigation in detail as to the truth or falsehood of the particular assertions made by active members of the antivivisectionist propaganda. Dr. Cannon, however, attacks his subject from a basic standpoint and sets before himself as his objective an inquiry into the reasons for the unfair and irritating conceptions which prevail among the vast mass of those who are so strongly opposed to animal experimentation. This inquiry he divides as follows: 1, the conflicting statements as to the existence and extent of painful experiments; 2, an inquiry which in all matters of controversy necessarily arises, on the appearance of conflicting testimony, as to the experience and characteristics of the contestants; 3, certain assumptions regarding animals, and 4, the question of motives.

Dr. Cannon shows the significance that the term "vivisection" carries in the mind of the antivivisectionist, viz., that of "the cutting or dissection of sentient living animals, bound or restrained, and subjected to the full torture of extensive operation without anesthesia", and he sets against it the statistical returns of experiments made some time ago in Massachusetts, and the official figures—required by Act of Parliament—in Great Britain for 1906. To these he adds the individual testimony of experimenters of large experience, to the effect that in their many years of work they have never had occasion to perform, and never had witnessed any experiment of the class described. As against this last evidence he quotes the testimony of Miss Cook and Mr. Stephen Coleridge before the royal commission, to the effect that they have no confidence in the assertions made by experimenters as to the use of anesthesia. This naturally leads to the second point, the qualifications of the respective witnesses on the score of first knowledge, and secondly, character. Dr. Cannon points out that the very training of scientific investigators is of such a kind as to make their work useless unless they are skilled in the arts of accurate observation and careful and definite recording, and that they bring these qualifications to bear directly on the subject under discussion, viz., what actually goes on in the physiologic laboratory. Of their competence to state what actually occurs, there can thus be no doubt; of their necessity for doing so, it is easy to judge when it is remembered that to do otherwise would vitiate the very purpose of their work—for a record of an experiment that did not contain all available data would be useless as a basis for future work; consequently, the two qualities most essential for the scientific investigator to cultivate are accuracy of observation and precision in recording. The antivivisectionists, on the other hand, are not, as a rule, persons whose training is such as to foster these qualities, and even if they were, it is rarely the case that they have ever been so situated that they could have anything either to observe or to record. Their chief characteristics seem to be a keen sensibility and a vivid imagination. Dr. Cannon quotes one instance in demonstration of this fact which would be ludicrously funny were it not so pathetic in its exposition of the calamity of ignorance. A Mr. Peabody, commenting on an experiment (under ether) in which the *peripheral* end of a severed nerve was stimulated, dilates on the amount of agony involved therein, which, he says, must be obvious even to the casual reader. As to the question of character, a remark of Dr. Cannon is very apposite: "It is characteristic of our ways of thinking," he says, "that when a general statement is made, most of us interpret it in those concrete terms with which we are best acquainted." It is in accordance with this, that all animal experimenters possess so low a character in the eyes of the antivivisectionists that such terms as "fiends," "human monsters," "diabolical vivisectors," and "devilish science" are in vogue as generalizations from the fanciful pictures of novelists and poets, and are applied individually, and that as above stated, prominent antivivisectionists proclaim that they put no credence in the assertions of experimenters as to what was or was not done. Let us quote Mr. Coleridge from the "Appendix to the Third Report of the Commissioners," p. 182:

"Question 10952. We may have inspection, but still we may ask a person of character, when he saw the experiment, what his opinion of it was. You will not accept that? [Ans.] Certainly not, because I think that all these experimenters have the greatest contempt for the act of parliament. They would deny a breach of this act just as I would deny a breach of the motor car act. I drive a motor car, and when I go beyond the speed limit, and a policeman asks me, I say, 'No, I am not going beyond the speed limit.' Nothing would keep me from going beyond the speed limit except the presence of a policeman in the car; and nothing will keep an experimenter within the four corners of the act except an inspector in the laboratory."

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[1] Page 675, this issue.

Should we, in our turn, be justified, by parity of reasoning, in assuming every owner of a motor car, not to say every antivivisectionist also, to be a wanton lawbreaker and a deliberate liar?

It is unnecessary to pursue this subject in further detail. Dr. Cannon's address will tell its own tale far better than any summary can. It only remains for us to endorse his solution of the problem, namely, an active campaign of enlightenment of the public as to the actual facts in the case, which are so grotesquely distorted by the vivid imaginations of many undoubtedly estimable people, who are deficient in the knowledge that is necessary to enable them to form a correct judgment on the question. It is to combat this state of things, to spread a greater enlightenment among the public as to the truth of the premises on which they are called ultimately to form a judgment, that the Research Defense Society of Great Britain and the Council on Defense of Medical Research of the American Medical Association have been established.

INSIDIOUS LEAD POISONING.

For a long time pathologists called attention to the fact that the gouty kidney and the kidney of chronic lead poisoning resembled one another so closely as to be almost indistinguishable. Gradually it came to be realized that other features in the pathologic pictures of gout and lead poisoning bore the same marked resemblance. Out of this came, eventually, the definite conclusion that lead poisoning plays an important rôle in the etiology of gout—a disease which has only too persistently been relegated to that class in which heredity plays the most important part and the causation of which is shrouded in obscurity.

About five years ago as a result of the analysis of the statistics of Johns Hopkins Hospital for twelve years the rather startling conclusion was reached that gout in Baltimore is not much more infrequent than in England, though England is usually considered to be the great home of that disease. The proportionate frequency of the disease in St. Bartholomew's and Johns Hopkins, due allowance being made for the larger number of admissions to St. Bartholomew's, was as four to three. According to this gout occurs only one-fourth more frequently in England than in the United States. At the same time it was pointed out that at least two-thirds of the cases of gout seen in this country were the results of the habits of the individual and not inherited from the family strain. At least one-half of the acquired cases of gout were traced to lead poisoning. This gives an added pathologic significance to an intoxication that is usually thought of as only a casual disturber of health in certain occupations, and very rarely as a serious underlying condition on which chronic ailments are likely to be developed.

Since these Johns Hopkins' statistics were published lead poisoning has attracted much more attention in this country and its ultimate results have been looked for rather carefully. In the light of recent observations it seems not unlikely that certain persons who have an intense susceptibility for lead may need scarcely more than passing contact with the metal to have the production of definite effects. Dr. Walsh[1] has recently called attention to the extreme susceptibility which some people have to lead intoxication. In one case the lead stoppers of bottles containing carbonated drinks, in another the painting of a flat by a housekeeper, and in a third the drinking of water from an artesian well that flowed through new lead pipes, were enough to produce definite and characteristic symptoms of lead poisoning.

In all these cases there was an immediate reaction against the metal. People who suffer in this way are usually prone to consider that they are unfortunate in having such an immediate reaction produced. It is evident, however, that if this did not happen they would go on absorbing portions of the metal which in the course of time would give rise to the symptoms of chronic lead poisoning before the real nature of the intoxication was recognized. One wonders if there may not be a number of people who, while not possessing immediate susceptibility to lead, or to other related poisons, yet suffer in the long run from the more insidious forms of chronic poisoning. Scientific knowledge proceeds from the generic to the specific, and such a determination of definite causative factors to replace indefinite hypotheses, in the production of gout, would do much to clear up the obscurities of this phase of medicine.

THE CURE OF LEPROSY.

For a number of years Louisiana has supported an asylum for lepers, one of the foci of the disease in this country being in that region. For six years this institution has been carried on as a hospital and systematic treatment attempted under the general direction of Dr. Isadore Dyer, the well-known dermatologist of New Orleans. The biennial report recently sent out contains some figures rather subversive to our usually held ideas of the resistant and practically incurable nature of leprosy. One patient is reported as discharged cured, five more as practically well but kept for observation, fifteen in whom the disease has been arrested and only twelve as unimproved or in the terminal stages of the disease.

No specific treatment is claimed, unless the use of chaulmoogra oil may be called such, but daily hot baths (104 F.) have been found of great service and strychnin and arsenic appear to have been largely employed. In patients intolerant of the chaulmoogra oil, sweet oil has been used as a substitute but has been found less effective. Much attention is given to diet; the leper, the medical report says, needs all he can eat and should have the best there is. When we consider that the total number under care during the period was only sixty-one, it will be seen that nearly 10 per cent. of practical cures is claimed, improvement in about 25 per cent., and arrest of this hitherto considered inevitably fatal disease in as many more. In the report issued in 1906, three cures are reported.

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[1] Internat. Clin., Series 18, vol. II.

While there have been occasional announcements of marked improvement and apparent cure of leprosy, such figures as those given here are especially noteworthy. We hear of no such percentage of cures from other leprosariums in which a patient once committed is practically sentenced for life and escape is unknown. Some cases have been reported cured by Tonkin in Jamaica and possibly some others elsewhere in asylums, but these Louisiana statistics are the most encouraging that have yet appeared. As far as we are aware there has been no report of the spread of the disease from the colony, none of the employés or sisters in charge has suffered, or seems to have any fear of it. Such facts as these should put an end to the insane dread shown of isolated imported cases in some sections of the country.

It would be of interest to compare the treatment, dietary and hygienic surroundings of this so apparently successful Louisiana institution with those of other like establishments, but detailed data of the latter are not available. Much of the difference in results can probably be attributed to the hospital methods carried out in the Louisiana institution; the general acceptance of the view as to the hopelessness of the disease has undoubtedly been a factor acting prejudicially to its cure. The failure of introduced Scandinavian leprosy to spread in Minnesota and its asserted gradual disappearance there with improved conditions of living among the immigrants, have a like significance. While leprosy has been regarded in the past as incurable, this view seems no longer tenable.

THE UNITED STATES OPIUM COMMISSION.

The letter of Mr. Hamilton Wright on another page[1] of this issue is commended to the attention of our readers. His request for the cooperation of the medical profession in his inquiry we trust will call out the information he desires. There must be a vast amount of facts known only to medical men in regard to the spread of the opium habit in its various forms, and that can be brought out in no other way than through physicians. The figures he gives, however, are amply sifinificant, and can only mean that there is a marked increase in the use of opium for other than medical purposes. The increase in the importation of smoking opium (chandu) is especially significant; a doubling of the amount of the preparation especially manufactured for a particular form of vice, while our Chinese population has actually decreased, must mean that the evil is spreading among other races in this country to a dangerous extent.

We can not take this, moreover, as indicating the full extent of the evil; the figures give no information as regards the amount of crude opium that is manufactured here into smoking opium or the amount that is smuggled into the country. The royal commission adjusting the Chinese claims for damages by the race riots at Vancouver, B. C., had to pass on the claims of two opium manufacturers, each of whom demanded damages for loss of business at the rate of $100 a day. If the manufacture of smoking opium can be thus extensively carried on in one provincial town, what are the possibilities elsewhere? The condition has certainly caused alarm in Canada where it seems to have been unsuspected and almost suggests the opium panic in South Africa two or three years ago. As regards the increase of opium smoking among the whites in this country we need only cite the modest estimate of Kane, who, in 1882, considered 6,000 as perhaps too small a figure, and those received by Mr. Wright[2] of 5,000 white opium smokers in New York City alone and over 100,000 in the United States at the present time. Conditions are probably as bad in some other countries, especially in the great seaports, and it has been charged that the vice of opium smoking has even extended to the officers in at least one foreign navy, where it has been credited as a cause of some recent disasters.

We have spoken especially of the opium smoking vice because it is one that will be the chief subject to be considered by the international commission, and it is one that no one wishes to see become a living question in the Caucasian races. What it has done in China has been shown by Mr. Merwin in his recent articles in *Success*, and wherever the Chinese go, he says, the curse of opium smoking goes with them. It is a phase of the "yellow peril" that we may have to meet nearer our homes than we have anticipated, and one perhaps far more formidable than many others that have been more dreaded. The morphin and other ordinary opium habits have been, so to speak, always with us, and we know after a fashion, how to deal with them. They are bad enough, but they do not appear to become as universal and pervading a national vice as opium smoking has become in regions where it has prevailed. While this particular use of opium is the international question above all others, it has, as the above figures show, an aspect that European nations may have to consider in their own defense, even at home as well as in their colonies and dependencies. It is to be hoped that the international commission will be able to agree on methods that will be adopted by civilized governments generally, to control effectively the opium traffic. Proper international control will greatly aid the several states in maintaining regulations for the suppression of the opium vice within their own borders. It would be a serious deprivation if the world should lose the medicinal and pain-stilling uses of opium, but its absolute suppression would be a small price to pay if by it only could the evil as it exists in China be checked.

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[1] Correspondence Department, page 688.

[2] It is perhaps worth noting here that the figures given by Mr. Wright of the importation of crude opium, include only that containing 9 per cent. or over of morphin. Chinese smoking opium is, in China at least, made mostly, as we believe, of a product much weaker in morphin. Are importations of the *weaker Chinese opium excluded in the figures given? If so, how* much must we allow from this source?

THE NATIONAL FARM COMMISSION AND RURAL SANITATION.

Irrespective of politics, there will probably be general approval of the action of President Roosevelt in directing attention to the conditions existing on farms, and of his appointment of a commission to report on the possibilities of improving the social, industrial and sanitary aspects of farm life. As medical men we are naturally most interested in the sanitary conditions of farm life and gratified that the need of improvement along this line has been recognized. The commission should experience no difficulty in showing conclusively the need of work on this subject. Every physician with even a limited knowledge of rural life knows the deplorable sanitary conditions which exist in large sections of the country. It is necessary only to refer to the aphorism "typhoid is a rural disease" and to the wide-spread occurrence of malaria and hookworm disease in the South. In fact, the question of sanitation, important in all sections, is of paramount importance in some sections. The need is so obvious and urgent and some measure of relief, at least. so easy that this would seem to be the most tangible problem the commission could consider.

While there is no doubt that the commission will secure expert advice from sanitarians and medical men, the matter is of such importance that we feel that it is unfortunate that the President did not see fit to invite a sanitarian to become a member of the commission. From a humanitarian standpoint there is no brighter chapter in the record of Roosevelt's administration than the sanitary work in Panamá. We believe that there is an opportunity for adding an equally bright chapter by beginning work for the farmers and their families similar to that now done for the farmers' live stock.

The President calls attention to the fact that all efforts to aid the farmers have hitherto been directed to improving their material welfare while the man himself and his family have been neglected. Nowhere is this more marked than in the attitude of the general Government in matters relating to sanitation. It is a trite saying that whereas the Government, through the Department of Agriculture. aids the farmer generously in caring for the health of his hogs, sheep, etc., it does nothing for his own health. The Government issues notices to the farmer of the injury done to his crops by the cotton boll-weevil and potato bugs and how to combat it, but the injury the mosquito does in spreading malaria to the people who pick the cotton and hoe the potatoes is not impressed on him. The fact that horse-flies may carry anthrax to his cattle is dealt with at considerable length, but the diseases which the house-fly spreads to the milk and to the farmer's family attract practically no attention. How to build a hog pen or a sanitary barn is the subject of a number of Government publications but how to build a sanitary privy which will prevent the spread of typhoid, hookworm and many other diseases is regarded as of strictly local interest.

It is hoped that the commission will recommend that some branch of the Government be directed to prepare for the farmers popular sanitary bulletins similar to those issued so freely for the benefit of his live stock. In no way can the "life of the farmer be made richer" than by pointing out how the loss of life and of efficiency from preventable diseases can be diminished. "Improvement of the Social and Industrial Conditions" is a rather vague and difficult problem; "improvement of the sanitary conditions" has a definite, well-defined practical significance.

SOUTHERN MEDICAL JOURNALS AND CLEAN ADVERTISING.

The medical journals of the South are setting a praiseworthy example in the matter of clean advertising. A little while ago we referred to the *Southern Medical Journal,* a new periodical recently started at Nashville, Tenn., and commented on the high stand taken by it regarding proprietary advertisements. Now comes the *Old Dominion Journal of Medicine and Surgery,* under entirely new management and editorial control, with similar high ideals. It says:

"In the matter of advertisements, this journal endorses to the fullest extent the movement that is now on foot to exclude entirely from the columns of medical publications the announcements of questionable or unethical proprietary preparations. In accordance with this plan, and to insure thoroughly the clean character of this new publication, it is resolved that *no advertisements of any proprietary or 'patent medicine' that has not received the endorsement of the Council on Pharmacy and Chemistry of the American Medical Association, shall be accepted.* In taking this step *The Old Dominion Journal of Medicine and Surgery* desires to place itself on record as being thoroughly in accord with the general endeavor for ethical advertising."

But if the medical journals above referred to and others of equal quality are to be conducted on the high plane outlined and are yet to live, they must receive generous and adequate support from the profession. It takes cash to pay the printer and to meet the other expenses of publishing a medical journal, just as much as any other journal; and without it. success is impossible. There are two sources from which cash is derived—the subscribers and the advertisers. As regards the former it can scarcely be expected that a journal can be supported entirely by the payments of its readers, even supposing all readers paid their subscriptions promptly. An exception might be made in the case of such journals as, being highly specialized and appealing only to a limited class, are practically indispensable to the members of that class, and are thereby enabled to maintain a high subscription rate. On the other hand, the advertisers have always shown themselves more than willing to pay the bills; and, in the case of very many journals—we say this deliberately—the advertising pages are practically the only source of income. To state it differently: a large number of medical journals are to all intents and purposes supplied gratis by the advertisers. Is it any wonder that the advertisers' desires are granted and their interests guarded more zealously than those of the subscribers, namely, the readers? We hope that physicians of the South, individually, will support the two journals above named, so long as they live up to their promises. These journals ought to be able to look to a paid subscription list for at least the major part of their support. There can be no doubt that the South has problems in medicine peculiarly its own. Enough excellent work is being done, and still more ought to be done, by the physicians of the South, to afford a valid reason for the maintenance of one or two high-class journals to present that work. So long, therefore, as they fill their reading pages with material of a quality as high as that which their initial numbers provide, and continue to live up to the standard they have set regarding advertising, so long will they have a right to look to their readers for such an adequate income from subscriptions as shall permit no excuse for the prostituting of the advertising pages that the literary columns may exist.

THE MECHANICAL FACTOR IN THE PATHOGENESIS OF ARTERIAL DISEASE.

Since attention was directed by Amy B. Miles[1] to the prevalence of spontaneous aortic disease in rabbits there has been some uncertainty as to how far such substances as adrenalin, digitalin, etc., are responsible for the arterial changes which have been attributed to them when administered to rabbits. These changes are found almost exclusively in the aorta, and to a less extent in the iliacs, and consist primarily in a degeneration of the muscular tissue of the media with later involvement of the elastic tissue and secondary thickening of the intima. Certain bacterial toxins have been shown by Klotz[2] to favor the development of a process beginning in the intima of the aorta and pulmonary artery. More recently Klotz[3] has endeavored to eliminate the factor of toxins entirely. Rabbits were suspended by the hind legs for three minutes a day during periods of from ninety-two to one hundred and thirty days. Manometric studies had demonstrated that by this means the pressure in the aorta could be easily raised. The five rabbits which were subjected to this procedure all exhibited more or less marked changes in the aorta and in the carotids, subclavian and brachial arteries, the control animals being normal. Curiously enough, the changes in the descending aorta were exclusively of the adrenalin type of degeneration, showing the primary changes in the media, while in the peripheral vessels the intima was evidently the first part affected. The fact that the extremities by which they were suspended were entirely free from disease seems to indicate that the mechanical factor alone was responsible for the development of these two forms of arterial disease.

THE NIGHT CAMP FOR TUBERCULOUS PATIENTS.

The report of Dr. W. C. White, medical director of the Tuberculosis League of Pittsburg, contains a suggestion that is worthy of attention by those interested in the fight against tuberculosis. "Many patients," he says, "feel that it is absolutely impossible for them to give up work, mainly because they are the sole support of a family. These could be cared for in a night camp, where they could sleep out of doors, secure a good supper and breakfast, careful instruction and supervision, and yet continue their labors." The suggestions given by physicians and nurses as to the care of consumptive patients are often unheeded or imperfectly carried out because of the ignorance or carelessness of the other members of the family. The patient who must work is often so tired that he is unable to do those things for himself which the physician advises. He can be under the direct supervision of the physician and nurse but a few hours a week at most. By means of the tuberculosis night camp he could be brought under the control of the antituberculosis agencies for more than half his time, and the regulation of his life could be accomplished much more efficiently than by the occasional visits of the nurse or of the physician. In the neighborhood of every large city there are tracts of land where such camps could be established at small cost, and the workers domiciled there could go to their work in the morning refreshed by the pure air and strengthened by the good food provided by the camp. Not only would such patients be able to fight the disease longer, even if they should succumb eventually, but the danger of contagion to their families would be removed.

Medical News

CALIFORNIA.

San Francisco.

Inspection of Schools.—A physician and four trained nurses have been employed by the board of health, San Francisco, to inspect the pupils in the public schools.

Licenses Revoked.—It is reported that the Board of Medical Examiners has revoked the certificates of Dr. B. Brooks Lee and J. C. Anthony for unprofessional conduct.

Personal.—Dr. A. C. Hart and Mrs. Hart, Sacramento, have gone to Europe for a four months' trip.——Dr. Charles H. Bulson, Sacramento, has been appointed assistant surgeon of the California National Guard, with rank of first lieutenant.——Dr. and Mrs. Wislocki, San José, have returned from a trip through the northwestern states and British Columbia.

COLORADO.

New Hospital.—The Western Federation of Miners is building a hospital to cost $24,000 at Silverton. It is for the use of members of the organization in the southwestern part of the state.

Personal.—Dr. William H. Sharpley has been reappointed health commissioner of Denver for the next four years.——We are informed that the license of Dr. F. L. Crandell has been revoked because of illegal advertising.——Dr. Charles E. Elliott, Victor, was seriously cut and bruised by the overturning of his buggy, August 8.

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[1] The Journal, Oct. 5, 1907.

[2] Brit. Med. Jour., 1906, p. 1767.

[3] Centrlbl. für Allge. Path. u. Path. Anat., July, 1908.

GEORGIA.

Medical Society Meets.—At the annual meeting of the Fifth Congressional District Medical Society, held at Decatur, July 20, the address of welcome was delivered by the mayor and was responded to by Dr. H. M. Smith, Edgewood.

New Medical College Organized.—A new medical college to be known as the Hospital Medical College has been organized in Atlanta. Dr. J. H. Powell has been elected president; Dr. Giles Hathcock, vice-president; and Dr. Charles N. Field, dean. The faculty will consist of 17 instructors. The college will open on October 5.

ILLINOIS.

Cocain Seller Fined.—C. F. Herlecka, a druggist, arrested charged with illegally selling cocain, is reported to have been fined $200 and costs.

Personal.—Dr. F. W. Searles, New Lenox, one of the oldest and best known practitioners of Will County, was seriously injured in a runaway accident, August 7.

Chicago.

Mortality Statistics.—During the week ended August 15 there were 620 deaths, 363 of males and 257 of females. Causes of death were as follows: Apoplexy, 9; nephritis, 40; bronchitis, 4; consumption, 46; cancer, 25; convulsions, 2; diphtheria, 4; heart diseases, 63; influenza, 1; intestinal diseases, acute, 168; measles, 2; nervous diseases, 11; pneumonia, 32; scarlet fever, 4; suicide, 7; typhoid, 7; violence (other than suicide), 42; whooping cough, 7; other causes, 146.

Contagious Diseases.—During the week ended August 14, 181 cases of contagious diseases were reported, distributed as follows: Diphtheria, 41; scarlet fever 35; measles, 19; whooping cough, 25; tuberculosis, 37. With the exception of measles and tuberculosis there were fewer cases than in the preceding week. The Isolation Hospital is now empty. It has been thoroughly disinfected and is being painted and otherwise prepared for the reception of scarlet fever and diphtheria patients.

MARYLAND.

Tuberculosis Exhibition.—The Maryland Association for the Prevention and Relief of Tuberculosis will have an exhibit at the Montgomery County Agricultural Fair to be held at Rockville, August 25-28.

Personal.—Dr. Joseph C. Clark has been re-elected superintendent of the Springfield State Hospital for the Insane, Sykesville.——Dr. Benjamin Whitely, Catonsville, was operated on for carbuncle at the Union Protestant Infirmary, Baltimore, August 5.

Baltimore.

Bequest to Hospitals.—The will of Mrs. Sarah Reinhard provides for the following bequests: Hebrew Hospital, $200; Jewish Hospital, Philadelphia, $200.

Night Tenement Inspectors.—The appointment of night inspectors in tenements to prevent the overcrowding of sleeping rooms is urged by representatives of the Federated Charities. Italian laborers are said to be the chief offenders, and one instance is reported where nearly a score occupied a room intended for two persons. The city authorities approve the suggestion.

Hospital for Infectious Diseases.—The Muncipal Hospital for Infectious Diseases is practically completed and is being furnished. The ward building cost $19,000, and will accommodate 35 patients. Smallpox patients will be taken as heretofore to the Quarantine Hospital. A laundry building will furnish heat for the hospital and sleeping apartments. This, with the stable, cost $7,000. It is intended ultimately to have four such hospitals for infectious diseases. The health commissioner has not yet appointed the resident physician and assistants.

Personal.—Dr. James G. Linthicum, who was appointed to succeed Dr. Henry L. Smith as police surgeon, was painfully injured in a collision between his carriage and a street car August 7.——Dr. Henry M. Hurd, superintendent of Johns Hopkins Hospital, has been appointed a member of the state lunacy commission, vice Dr. Charles F. Bevan, retired.——Dr. Frederick W. Taylor sailed for Europe August 3.——Dr. William S. Halsted returned from Europe August 7.——Dr. James H. Chesnut was operated on for appendicitis July 10.——Dr. Arthur P. Herring has been elected secretary of the state lunacy commission.——Dr. James W. Johnson of Newberry, S. C., has been made instructor in medicine in the clinical laboratory of Johns Hopkins University.

Fever Epidemic Denied.—Dr. James Bosley, health commissioner, denies the statement that there is any typhoid epidemic in Baltimore. He quotes statistics of the health department showing that for the six weeks, July 1 to August 9, inclusive, there were 225 cases. For the same period of last year there were 105 cases. He asserts that 225 cases out of 60 000 population can not be regarded even as a "mild epidemic." During this period there were 39 cases of typhoid in 11 hospitals and in three there was not a single case For the six weeks there were 32 deaths from this disease. These statements are based on the presumption that all the cases of the disease which occurred in a specified time were reported. During the Methodist general conference in April there was not a case of typhoid or a serious illness among the delegates.

MASSACHUSETTS.

Personal.—Dr. Elizabeth A. Riley, Boston, and Drs. George Rhoads, Walter R. Weiser and Harvey W. Van Allen have gone to Europe for the summer.——Dr. John J. Martin has been elected school physician of Beverly.

Bequest.—By the will of the late Patrick Donnelly, Arlington, $250 is bequeathed to St. Elizabeth's Hospital, Boston.——The late Daniel E. Millerick, in his will, directs his trustees to pay one-eighth of his estate to the Carney Hospital, Boston.

Boards of Health Meeting.—At the quarterly meeting of the Massachusetts Association of Boards of Health, held at Gallups Island, Boston Harbor, July 23, papers were presented by Prof. Theobald Smith on "The House Fly as a Carrier of Disease," and by Mr. B. R. Rickards on "The Disinfection of Books."

MINNESOTA.

Personal.—Dr. Thomas Lowe, Pipestone, has been appointed head physician of the Modern Woodmen of America for Minnesota.

Tuberculosis Hospital.—There are now fifty-three patients in the Minnesota Sanatorium for Consumptives, Walker, and only seven vacancies remain.

Hospital Annex Opened.—An annex to the Fairview Hospital, Minneapolis, has just been completed. The building is a two-story brick, fireproof structure built at a cost of $70,000, and donated to the association by George H. Christian.

Communicable Diseases.—Two cases of diphtheria are reported from Eveleth, and one case has made its appearance at Biwabik.——The State Board of Health reports that during the six weeks ended July 30, 419 cases of smallpox were under treatment in the state, with no deaths. St. Paul had 87 of these cases and Duluth 67 cases.

MISSOURI.

Personal.—Dr. Frank P. Norbury, Jacksonville, Ill., has opened an office in North St. Louis.——Dr. Ernest G. Mark, Kansas City, is visiting Louisville.

Barnes Medical College Granted Mandamus.—Judge Muench of the Circuit Court of Missouri has granted a writ of mandamus to compel the State Board of Health of Missouri to examine the students who graduated from Barnes Medical College last June. The case will probably be carried to the Supreme Court.

The State Sanatorium.—At a recent meeting of the Missouri State Sanatorium for Incipient Tuberculosis it developed that the expense of maintaining the institution would exceed the appropriation by $5,000 or more, and for this reason the majority of the directors favored closing the institution on August 15. One of the members of the board strongly objecting to this action, guaranteed to make good any deficit, and his proposition was accepted by the board. It is probable with rigid economy the work will proceed to the end of the fiscal year with practically no deficit.

Societies.—At the annual meeting of the state medical association, an Association of Secretaries and Councilors of County Medical Societies was organized. A constitution and by-laws were adopted. The following officers were elected: President, Dr. Foster W. Burke, Laclede; vice-presidents, Drs. Marshall A. Smith, Gallatin; Edward N. Chaslain, Rich Hill; and secretary-treasurer, Dr. Charles Wood Fassett, St. Joseph.——At the annual meeting of the North Missouri Medical Society, held recently in Willow Springs, the following officers were elected: President Dr. Ezra C. Grim, Kirksville; vice-presidents, Drs. William L. Brosius, Gallatin, and Godfrey O. Cuppaidge, Moberly; corresponding secretary, Dr. E. C. Callison, Kirksville; recording secretary, Dr. O. McEwen, Salisbury; and treasurer, Dr. Robert Haley, Brookfield.

NEW YORK.

Society Elections.—At the annual meeting of the Buffalo Academy of Medicine Dr. Edwin A. Bowerman was elected president; Dr. Harry R. Trick, secretary, and Dr. William I. Thornton, treasurer.

Fund for New Hospital for Tarrytown.—Mr. John D. Rockefeller has contributed $25,000 to the building fund of the new Tarrytown Hospital, on condition that the citizens of Tarrytown raise $50,000 more.

A New Tuberculosis Hospital.—The Rensselaer county board of supervisors has appropriated $25,000 for the erection of a hospital for the treatment of advanced cases of tuberculosis. Sixty-five patients will be accommodated.

Personal.—Dr. Carl G. Leo-Wolf, Niagara Falls, has returned from a two months' trip abroad.——The state civil service commission has appointed Dr. Fred E. Lettice, Schenectady, physician at Sing Sing prison at a salary of $2,000 a year.

Donation to Charity.—It has recently been announced that the donor of the Caroline Rest Home for Mothers at Hartsdale was Mr. George H. F. Schrader. Mr. Schrader has just given a country club for social workers to the Association for Improving the Condition of the Poor, which is also located at Hartsdale. His gift amounts to $500,000; the club cost $40,000; the Caroline Rest Home for Mothers, $105,000, and the remainder of the gift is to be used as an endowment fund for the home. This home will accommodate seventy patients and will be used for mothers convalescing after childbirth.

New York City.

Decrease in the Death Rate.—The health department reports that for the week ended August 10 the death rate of the city was 16.74, as compared with 22.22 of the same week of last year. The total number of deaths in the city was 1,419; last year there were 1,825 for the same week.

Contagious Diseases.—There were reported to the sanitary bureau for the week ending August 8, 411 cases of tuberculosis, with 137 deaths; 170 cases of diphtheria, with 14 deaths; 130 cases of measles, with 7 deaths; 89 cases of scarlet fever, with 2 deaths; 107 cases of typhoid, with 20 deaths; 23 cases of whooping cough, with 12 deaths; 10 cases of cerebrospinal meningitis, with 6 deaths; and 10 cases of varicella, a total of 950 cases and 198 deaths.

Street-Car Accidents.—The public service commission reports that during the month of July there were 239 serious accidents, 63 fewer than in June. There were 169 car collisions, 1,002 persons and vehicles were struck by cars, 633 were injured boarding cars, 1,305 were injured alighting from cars, and 49 were hurt by contact with electricity. Thirty-five persons were killed, 13 persons received fractured skulls, 4 had their limbs amputated and 54 had broken limbs. Included in these numbers were 2,313 passengers, 645 employés and 620 others.

Red Cross Day Camp.—A day camp for tuberculous patients will be opened on the roof of the Vanderbilt Clinic in October by the American National Red Cross in cooperation with the clinic. About 40 patients will be cared for the year round at first during the day only and afterward at night also. The clinic will put the roof in condition and furnish medical supervision, while the New York County subdivision of the state board of the Red Cross will defray the expenses of maintenance and nursing. The patients to be received will be those suffering from the disease in an early or moderately advanced stage. This effort marks the entrance of the New York County Red Cross Society into the tuberculosis crusade.

Recommendations.—A supplementary report of the State Charities Aid Association of the municipal hospital system contains many recommendations, such as the establishment of emergency relief stations for the better treatment of rush cases, with an ambulance service attached; local hospitals for the relief of acute cases, to be provided especially with vacant wards for the handling of cases following catastrophes and great accidents; general hospitals for the treatment of non-acute chronic diseases, etc. At present the daily number of sick in Greater New York is 135,396, and for every death in the year 1.83 persons are constantly sick. Of every 100 in the population 2.21 are sick of chronic or acute diseases, and of this number 8.4 per cent. are treated in hospitals.

OREGON.

State Board Changes.—At the annual election of the State Board of Medical Examiners Dr. Andrew C. Panton, Portland, succeeded Dr. William S. Mott, Salem, as president; Dr. Robert C. Coffey, Portland, succeeded Dr. Byron E. Miller, Portland, as secretary; and Dr. Edward B. McDaniel, Baker City, succeeded Dr. Robert C. Coffey, Portland, as treasurer.——Dr. Edward B. McDaniel, Baker City, has been reappointed a member of the State Board of Medical Examiners.

State Association Meeting.—The thirty-fourth annual meeting of the Oregon State Medical Association was held in Portland, July 1, 2 and 3, under the presidency of Dr. Robert C. Coffey, Portland, who in his presidential address, entitled "The Conservative Organization of Medicine and Surgery in the Pacific Northwest," advocated the completion of a thorough organization of physicians in the states of Oregon, Washington and Idaho; the consolidation of the two medical schools in Oregon into one; and the combination of the two medical journals of the Pacific northwest. The following officers were elected: President, Dr. William H. Byrd, Salem; vice-presidents, Drs. William Kuykendall, Eugene; Calvin S. White, Portland; and R. C. Yenney, Portland; secretary, Dr. William House, Portland (re-elected); treasurer, Dr. Edna D. Timms, Portland; and councilors, Drs. Samuel T. Linklater, Hillsboro; and Walter T. Williamson, Portland (re-elected).

PENNSYLVANIA.

Officers Elected.—At the regular meeting of the Fifth Senatorial District of the State Medical Society, held at Chambersburg, the following officers were elected: President, Dr. J. J. Coffman, Scotland; vice-president, Dr. A. D. Dalbey, McConnellsburg; secretary and treasurer, Dr. J. Holtzappel, York.

No Right to Vaccinate.—The State Health Department has been notified that a person claiming to represent the State Health Department, has been traveling through Chester County insisting on vaccinating farmers and their families. He charged a moderate fee and has collected a large sum of money. This man is not known by the State Health Department.

Personal.—Dr. R. G. Covode, Johnstown, was operated on recently as the result of injuries sustained a few weeks ago in an automobile accident.——Dr. J. K. Evans, Malvern, was thrown from his carriage in a runaway accident and seriously injured.——Dr. Warren Royer, Trappe, said to be one of the oldest practicing physicians in this state, recently celebrated his eighty-eighth birthday anniversary.

State Railroad Accidents.—The report of the Pennsylvania state railroad commission shows that 5,160 accidents occurred on the railroads of the state during the six months ended June 30. Of this number 525 resulted in death. The average number of persons injured per month was 772, and the month of February heads the list with 866 injured. The average number killed per month was 88, and the month of March heads this list with 102.

New Society Organized.—The physicians of Turtle Creek Valley have organized a medical society to be known as "The Valley Medical Society." The following towns are represented: North Braddock, East Pittsburg, Turtle Creek, Wilmerding, Wall, East McKeesport, Pitcairn and Trafford City. The following officers were elected: President, Dr. Todd, Trafford City; secretary, Dr. Walter R. Shoemaker, Wilmerding, and treasurer, Dr. Frederick L. Muthe, Wilmerding.

Society Meetings.—The physicians of the slate region organized the Slate Belt Medical Society at Bangor, August 4. Dr. Albert A. Seem, Bangor, was elected president; Dr. Sydenham P. Uhler, Pen Argyl, secretary; and Dr. Benjamin F. Dilliard, East Bangor, treasurer.——At the annual meeting of the Allegheny Valley Medical Society, held in Cheswick, August 1, the following officers were elected: President, Dr. William A. Arnold, Tarentum; vice-presidents, Drs. William P. McCulloch, Cheswick, and Thomas E. McConnell, Parnassus; secretary, Dr. William T. Hall, Tarentum; treasurer, Dr. Albert S. Kaufman, New Kensington.——The Columbia County Medical Society held a picnic meeting in Columbia Park, July 11, at which the families and friends of members were present. The Rev. Dr. Hemingway made an address on "The Relation of the Ministry and the Medical Profession," and Mr. Bonner of Pittsburg talked on "The Legal Profession as Contrasted with the Ministry and Physicians." On motion, Dr. Luther B. Kline was appointed to prepare a history of the society and to present it at the October meeting.

Philadelphia.

Personal.—Dr. J. LeRoy Wright, Lauraville, Md., has been appointed resident physician to the Chester County Hospital, West Chester, Pa.

Money to Charity.—The will of the late Miss Annie Van Reed, Reading, Pa., bequeaths $6,500 to the Medico-Chirurgical

Hospital.——The will of the late Mary E. Abbott contains a contingent bequest of $5,000 to the West Philadelphia Hospital for Women. This sum is to be used to establish and maintain a free bed, to be known as the Mary E. Abbott free bed.

Smallpox on Steamship.—The steamship *Havcrford*, from Liverpool to Philadelphia, was detained at the United States quarantine station at Reedy Island on account of the presence of two cases of smallpox. The patients, with several suspects, were transferred to the Isolation Hospital, and after thorough fumigation the ship was allowed to proceed. She carried 140 passengers.

Dr. Cairns Reinstated.—Dr. A. A. Cairns, who served for several years as chief medical inspector of the bureau of health and who resigned this position in June last on account of ill-health, was reinstated and resumed his position August 15. Dr. C. A. Groff, who has been acting chief medical inspector, has been made supervising medical inspector. This is a new position in the bureau of health.

Hospital Ban Withdrawn.—The ban placed on several city hospitals by the director of public safety, forbidding the police to take trolley-accident cases to these institutions, was lifted August 12. This order had previously been modified so that of the ten hospitals originally named only the Presbyterian, German and Mount Sinai remained under the ban. Every public hospital of standing may hereafter receive trolley-accident cases.

Night Quarantine Service.—Dr. Walter Wyman, surgeon general of the United States Public Health and Marine-Hospital Service, announces that an all-night inspection service will be established at the national quarantine station, Reedy Island. It has been the custom to detain vessels entering this port at night until sunrise the following morning for quarantine inspection. Local maritime interests have been striving for the establishment of this service for several years.

Physician Implicated in Cocain Crusade.—Dr. J. Philips Bader was arrested and held in $1,000 bail August 11, charged with the indiscriminate and criminal distribution of cocain. Dr. Bader, who conducted a small drug store, is looked on by the authorities as the head of a "dope ring" with victims in all sections of the city. Bader's drug store was the headquarters for the sale of this drug and the doctor had several men under his patronage who sold the drug throughout the city in 25-cent packages.

To Safeguard Health.—The Department of Public Health and Charities has been greatly exercised over the introduction of transmissible diseases in the various hospitals throughout the city. The department feels that these diseases are largely introduced by outsiders visiting the patients, and with a view of lessening this evil the director of the health bureau will furnish the hospitals daily with a list of the names and addresses of those reported to the bureau of health as having transmissible diseases.

Health Report.—The total number of deaths reported for the week ended August 15 was 448, including 242 males and 206 females. This is a decrease of 34 from the number reported in the preceding week, and a decrease of 54 from the number reported in the corresponding week of last year. The principal causes of death were: Typhoid, 6; measles, 2; pertussis, 4; diphtheria, 5; consumption, 44; cancer, 23; apoplexy, 12; appendicitis, 7; Bright's disease, 29; premature birth, 20; heart disease, 37; acute respiratory diseases, 17; enteritis, 8; congenital debility, 17; suicide, 3; accidents, 16, and marasmus, 16. There were 117 cases of contagious disease reported, with 13 deaths, as compared with 84 cases and 13 deaths reported in the previous week.

Money for Charity.—By the will of the late Mrs. Annie L. Lowry the Philadelphia Home for Incurables will receive $10,000; Pennsylvania Society to Protect Children from Cruelty, $10,000; Home of the Merciful Savior for Crippled Children, $10,000; Home for Infants, $5,000; Starr Center Association, $5,000; Presbyterian Hospital, for Mary L. Davidson memorial bed, $5,000; German Hospital, for Nathan Davidson memorial bed, $5,000; Philadelphia Home for Incurables, for Sarah K. Davidson memorial bed, $5,000; West Philadelphia Hospital for Women, for a free bed, $5,000; Friends' Asylum for the Insane, $3,000; Pennsylvania Hospital for the Insane, to be used for poor patients, $3,000, and the Industrial Home for Blind Women, $25,000.

Weekly Health Talk.—In the weekly public health talk of Dr. Neff, director of public health and charities, it is stated that there has been a decrease of 15 per cent. in the mortality from tuberculosis for the first three weeks of July as compared with the same period of 1907, despite the fact that the registration of the disease for the first three weeks of July, as compared with the same period of 1907, shows an increase of 56 per cent. The health department acknowledges the interest the physicians of the city are taking in the crusade against tuberculosis. Dr. Neff has issued the following "dont's" for consumptives:

Don't spit on the sidewalk; it spreads disease and is against the law.

Don't spit on the floor of your rooms or hallways.

Don't spit on the floor of your shop.

Don't cough without holding a handkerchief or your hand over your mouth.

Don't kiss a person with a cough or cold.

Don't live in rooms where there is no fresh air.

Don't work in rooms where there is no fresh air.

Don't sleep in rooms where there is no fresh air.

Don't eat without washing the hands.

Don't neglect a cough or cold.

Don't waste your money on nostrums for consumption. Go to a doctor or dispensary.

Don't drink whisky, beer or other intoxicating drink. If you have consumption it will make it harder for you to get well.

VERMONT.

School for Health Officers.—The tenth annual school for health officers was opened at Burlington, June 29, with addresses by Governor Proctor, Dr. Charles S. Caverly, Rutland, President of the State Board of Health, and Mayor Bigelow, of Burlington.

Sanatorium Report.—Dr. Henry Chadwick, superintendent and medical director of the Vermont Sanatorium, West Pittsford, reports that since the opening of the sanatorium in December last, 53 patients have been admitted, of whom 26 have been discharged, leaving 27 under treatment. Of those discharged, 8 are apparently cured, 5 of whom were incipient, and 3 moderately advanced cases; in 9 cases the disease was arrested; 3 of these were incipient and 5 moderately advanced cases. Four patients were improved; 2 of these were far advanced and one moderately advanced; one was a case of chronic bronchitis and not tuberculosis. Five patients were not improved; of these 3 were far advanced, one was moderately advanced and one left the sanatorium after a stay of two days.

Medical Society Meetings.—At the annual meeting of Rutland County Medical and Surgical Society, held in Rutland, July 14, Dr. William W. Townsend, Rutland, was elected president; Dr. Herbert S. Martyn, Cuttingsville, vice-president; Dr. William W. Stickney, Rutland, secretary; and Dr. Henry R. Ryan, Rutland, treasurer.——At the annual meeting of Caledonia County Medical Society, held in Montpelier, the following officers were elected: President, Dr. John M. Allen, St. Johnsbury; vice-president, Dr. Albertus A. Cheney, Lyndonville; secretary, Dr. Walter J. Aldrich, St. Johnsbury; and treasurer, Dr. John M. Gibson, McIndoe Falls.——At the annual meeting of the Addison County Medical Society, held in Middlebury, Dr. George F. Edmunds, Bristol, was elected president; Dr. Frank C. Phelps, Vergennes, vice-president; Dr. Peter L. Dorey, Middlebury, secretary; Dr. Stanton S. Eddy, Middlebury, treasurer; Dr. Merritt H. Eddy, Middlebury, librarian; and Dr. Harold L. Williamson, Bristol, delegate to the state society.

WASHINGTON.

Hospital Burned.—The Hospital of the Roslyn-CleElum Miners' Association, CleElum, was destroyed by fire July 9. All patients were removed without casualty.

Drinking Cups Abolished.—By order of the health department of Seattle drinking cups have been abolished in the public schools and bubbling fountains substituted.

State Board Election.—At the recent election of the State Board of Medical Examiners, Dr. Elmer D. Olmsted, Spokane, was elected president; Dr. James A. Durrent, Snohomish, vice-president, and Dr. Kenneth B. Turner, Seattle, secretary.

Fined for Selling Misbranded Drugs.—A druggist of Seattle was recently fined $25 and costs for violation of the state law by selling misbranded drugs. The drug sold was a "patent medicine," the label on which did not tell the quantity or proportion of alcohol in it, nor the country of manufacture.

Personal.—Dr. James A. M. Henderson, Seattle, has started for Nova Scotia and England.——Dr. C. P. Jento, physician at the federal prison, McNeil Island, has resigned and will practice in Tacoma.——Dr. Jabez A. Mahan, Ellensburg, has been reappointed a member of the board of trustees of the State Normal School.——Dr. Fonda Nadeau, Seattle, has gone to Europe and will remain until December.

Health of Seattle.—During June there were 303 births and 155 deaths reported in the city. Chief among death causes were diseases of the circulatory system, 28; accidents (including suicides), 21; genitourinary diseases, 17; tuberculosis, 16; digestive diseases, 15, and nervous diseases, 12. During the month 39 cases of diphtheria, 21 of smallpox, 38 of scarlet fever, 20 of measles, 5 of typhoid fever, and 2 of cerebrospinal meningitis were reported. The plague laboratory reports that 5,304 rats were killed, of which 4,856 were examined, and but two were found to be infected with plague.

New Society Organized.—The Okanogan County Medical Society was organized at Riverside, July 17, and the following officers were elected: President, Dr. H. M. Fryer, Riverside; vice-president, Dr. James B Couche, Twisp; secretary-treasurer, Dr. Charles R McKinley, Brewster, and censors, Drs. W. W Schwabland, Loomis, Clayton P. House, Oroville, and A. M Polk, Conconully.

GENERAL.

Esperanto and Medicine.—Major P. F. Straub, Medical Corps, U. S. Army, has been appointed to represent that department at the Esperanto Congress to be held at Dresden, Germany, this month. This would seem to indicate that this new language is regarded as of sufficient importance to be recognized, indirectly at least, by one branch of the government.

Female Nurses in the Navy.—Formal orders are being prepared at the Navy Department, organizing a corps of female nurses for the Navy. A woman physician will be chief of the corps at a salary of $1,800 a year, and 100 nurses will be engaged with salaries of from $15 to $75 a month. Candidates will report in Washington September 1 for a special course at the Naval Hospital Medical School.

Marine-Hospital Examination.—A medical board will be convened by the Bureau of Public Health and Marine Hospital Service on September 21 at 10 a. m., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine Hospital Service. Candidates must be between 22 and 30 years of age, graduates of a reputable medical college, and must furnish testimonials as to their professional and moral character. Information relative to the examination can be obtained by addressing the Surgeon General, Public Health and Marine Hospital Service, Washington, D. C.

INTERNATIONAL CONGRESS ON TUBERCULOSIS.

DISTINGUISHED FOREIGNERS TO ATTEND

This congress, as previously announced, will be held in Washington, D. C., Sept. 21-Oct. 12, 1908. One week of the congress, September 28 to October 3, is to be devoted to section work.

PROGRAM OF ORTHOPEDIC SECTION

Following is the program for Section III, Surgery and Orthopedics, under the presidency of Dr. Charles H. Mayo, Rochester, Minn. (The programs of other sections appear in the preliminary announcement.)

Construction of Hospitals for Tuberculosis Patients. Mr. Meyer J. Sturm, Chicago.

Tuberculosis of the Larynx. The Type Which is Capable of Recovery and the Principles of Treatment. Dr. W. E. Casselberry, Chicago.

A Brief Note on the Value of the Ophthalmic Tuberculin Test in the Question of Surgical Treatment of Orbital Disease. Dr. Charles A. Oliver, Philadelphia.

Tuberculosis of the Choroid. Dr. Sydney Stephenson, London.

Tuberculosis Affecting the Cornea. Dr. Oscar Dodd, Chicago.

Tuberculosis of the Ear. Dr. Clarence J. Blake, Boston.

Tuberculosis of the Cervical Lymph Nodes: Report of 275 Cases Treated by Radical Extirpation. Dr. Chas. H. Dowd, New York City.

Tuberculous Glands in Children. Mr. H. J. Stiles, Edinburgh, Scotland.

Retroperitoneal Tuberculous Glands and Their Relation to the Spinal Symptoms. Dr. C. F. Painter, Boston.

(a) *Traitement des Adénites Tuberculeuses.* (b) *Traitement de la Tuberculose du Testicule.* Dr. Cazin Chef, Paris.

Surgical Tuberculosis of the Lungs. Prof. Sauerbruch, Marburg, Germany.

Tuberculosis of the Lungs and Pleura. Dr. S. Robinson, Boston.

Tuberculosis of the Breast. Dr. Wm. Rodman, Philadelphia.

Tuberculous Arthritis of the Hip Joint. Dr. Stephen H. Weeks, Portland, Me.

The Treatment of Tuberculous Hip Disease by Weight Bearing and Fixation by the Lorenz Short Hip Spica. Dr. H. Augustus Wilson, Philadelphia.

The Question of Non-Interference in the Passive Abscesses of Tuberculous Joint Disease. Dr. Morton F. Shaffer, New York City.

Vaccine Therapy in Joint Tuberculosis. Dr. E. H. Ochsner, Chicago.

Indications for Operative Treatment of Bony Tuberculosis. Dr. A. Codivilla, Paris, France.

Tuberculous Arthritis of the Knee Joint. Dr. Mauclaire, Paris.

Tuberculose Medio-Tarsienne et Pied Plat. Dr. A. Jeanne, Rouen, France.

De la Méthode de Mosetig dans le Traitement de Tuberculose Osseuse. Dr. Nové Josserand, Lyon, France.

Tuberculosis of the Vas, Epididymitis and Testicle. Dr. John B. Walker, New York.

Tuberculosis of the Bladder. Dr. Wilhelm Karo, Berlin, Germany.

Tuberculosis of the Bladder. Dr. Bransford Lewis, St. Louis.

Tuberculosis of the Kidney. Dr. Arthur Dean Bevan, Chicago.

Tuberculosis of the Kidney. A Preliminary Study. Dr. Ramon Guiteras, New York City.

Tuberculosis of Intestines and Appendix. Prof. Henri Hartmann, Paris.

Acute Forms of Abdominal Tuberculosis. Dr. D. N. Eisendrath, Chicago.

Tuberculous Adnexa. Prof. Samuel Pozzi, Paris.

Tubercular Peritonitis. Dr. J. B. Murphy, Chicago.

Experimental Testicular Tuberculosis. Dr. Chas. Esmonet.

Surgical Bearings of Tuberculin. Dr. R. W. Philip, Edinburgh, Scotland.

Surgical Tuberculosis. Dr. E. H. Bradford, Boston.

The Prevention, Diagnosis and Surgical Treatment of Tuberculous Sinuses and Abscess Cavities. Dr. Emil G. Beck, Chicago.

The Value of Fresh Air in Conjunction with Artificial Hyperemia in the Conservative Treatment of Surgical Tuberculosis. Dr. Willy Meyer, New York City.

The Importance of, and How the State of Minnesota Cares for Its Indigent Children Suffering from Tuberculosis of the Bones and Joints. Dr. Arthur J. Gillette, St. Paul.

Outdoor Treatment of Surgical Tuberculosis. Dr. De Forest Willard, Philadelphia.

La Cure d'Altitude et la Cure Solaire de la Tuberculose Chirurgicale. Dr. Rollier, Lucerne, Switzerland.

Tuberculosis of the Muscles, Fascia and Tendons. Dr. James F. Mitchell, Washington, D. C.

Tuberculosis of the Gall Bladder, Pancreas, Stomach and Liver. Dr. L. W. Hotchkiss, New York City.

Rational Spinal Support. Dr. Henry W. Frauenthal, New York City.

Clinical Contribution on the Pharmacotherapy in the Surgical Tuberculosis by Hypodermic Treatment. Dr. Gualaro.

International Conference in Philadelphia.

Preceding the section work, and in connection with the congress, will be held the seventh annual meeting of the International Antituberculosis Association, at Philadelphia, September 23-26. This association is a delegate body composed of representatives of the various countries, appointed by their respective governments or antituberculosis associations. The program of the conference is as follows:

September 23, 8 p. m.: "Social Life and Tuberculosis," by Prof. Dr. Pannwitz, Berlin.

September 24, 8 p. m.: "The Evolution of the Treatment of Pulmonary Tuberculosis," by Dr. C. Theodore Williams, London.

September 25: "Provision for Advanced Cases of Tuberculosis," by Dr. Biggs, New York City, and Dr. von Leube, Würzburg; "Prophylactic Measures in Tuberculosis," by Lawrence F. Flick, Philadelphia, and Dr. Nathan Raw, Liverpool; "Hygienic Requirements for Sanatoria," by Dr. Lawrason Brown, Saranac, N. Y., and Dr. Pannwitz, Berlin; "Antituberculosis Education," by Dr. Livingston Farrand, New York City; Dr. G. A. Heron, London; Prof. A. Calmette, Lille, and Dr. Kirchner, Berlin; "Tuberculosis and Traffic," by Dr. Sherman G. Bonney, Denver.

September 26: "Tuberculosis and Legal Rights," by Dr. Samuel G. Dixon, Harrisburg, Pa.; "The Red Cross Society in the Crusade Against Tuberculosis," by Dr. Pannwitz, Berlin, and Miss Mabel T. Boardman, Washington; "Notification of Tuberculosis," by Dr. Walsh, Philadelphia; lecture on "*Les nouveaux procédés de diagnostic précoce de la tuberculose,*" by Prof. A. Calmette, Lille.

Each day there will be receptions, banquets and other social functions.

FOREIGN.

Another Sign of Progress.—The *Gesundheitslehrer* states that the *Frankfurter Zeitung*, an important German daily, has now dropped from its columns advertisements of Bayer's alleged cure for diabetes. He is one of the largest advertisers in Germany.

Prison Term for Leipsic Irregular.—One of the Ausmeier brothers, a trio of well-known German charlatans, was recently sentenced to four months in prison in a personal injury suit. He treated a sick woman with purgatives after having merely examined her urine; as it was a case of typhoid, serious injury resulted. His appeal to a higher court was thrown out.

The Moebius Endowment.—The endowed prize founded as a memorial to the late neurologist, P. J. Moebius, will be offered next year for the first time. The committee in charge includes the presidents of the German neurologic and psychiatric societies. A prize will be awarded every two years for the best work presented in the interval on one of these specialties alternately. A Moebius portrait medallion will accompany the prize. In 1909 the prize will be given for research on the connection between Moebius' "infantile disintegration of the nuclei" and the anatomic bases of bulbar paralysis. Address Prof. L. Edinger, Frankfort on the Main, Germany.

Cattle Protected Against Nostrums.—A letter from Holland in the *Wiener klinische Rundschau*, August 2, states that during an epizootic in Holland last year the State Serum Institute at Rotterdam—at the request of the farmers—investigated the remedies advertised to cure the cattle disease, and published its verdicts in regard to their value or worthlessness. By this means the nostrums and quacks in this line of business were unable to do harm. The writer remarks that the state protects cattle, but lets human beings suffer in consequence of ignorance in regard to fake remedies, etc., without interference. He adds that Professor Kouwer, at the last meeting of the Netherlands Medical Association, called attention to the fact that when women are dying from abortifacient maneuvers they invariably state that they were tempted to the deed by some advertisement in the daily papers, and he denounced the lay press as the "panderer to this bloody business."

LONDON LETTER.

(*From Our Regular Correspondent.*)

London, Aug. 8, 1908.

Annual Meeting of the British Medical Association.

The annual meeting of the British Medical Association was held at Sheffield on July 27-31, and was attended by nearly 1,000 members. The University of Sheffield placed its spacious buildings at the disposal of the association and afforded ample room for housing the seventeen sections. Mr. Simeon Snell, the president, delivered an address in which he dealt with a number of subjects—the history of the association, the part played by Sheffield in this and in the promotion of medical education and science generally, and his own researches on miners' nystagmus. The address in medicine was delivered by Dr. James Kingston Fowler, dean of the faculty of medicine of the University of London and senior physician of the Middlesex Hospital. He took for his subject "Modern Medicine." Discussing the student and practitioner of the future, he said that students in ever-increasing numbers will resort to the universities for the preliminary and intermediate subjects in their education, and that medical schools will simply supply the clinical teaching. He deplored the abuse of hospitals by persons able to pay for medical advice. During 1907 no fewer than 6,000,000 out-patient attendances were recorded by the London medical charities. For thirty years this abuse had been a burning subject. He suggested that in the future the rôle of the consulting physician should be more clearly defined and that some should cease to undertake regular medical attendance. The honorary degree of D.Sc. of the University of Sheffield was conferred on the president and distinguished members of the association and visitors. Among the recipients of the honor was Dr. Murphy of Chicago. The business of the representative meeting of the delegates of the various branches was important. Two special reports attracted much attention. The first dealt with the subjects of the ethics of consultation. A number of rules were set out, the main object of which was to protect the interests of the attending practitioner. From the point of view of the consultant he must be regarded as primarily and continuously responsible for the patient's medical care, the consultant having relatively a temporary responsibility. The relation of the consultant to the attending practitioner was one of trust which considerations for his own honor and of the interests of the profession and public should preclude him from perverting to his own advantage to the detriment of the attending practitioner. An elaborate report was presented by Sir Victor Horsley on behalf of the medico-political committee. The gratuitous treatment of rate-maintained patients and the relations of doctors and insurance and friendly societies were considered. A recommendation to further the introduction of the metric system was adopted.

Decline of the Plague in India.

In 1907 the mortality from plague in India reached the appalling total of 1,204,194. But a rapid decline has now occurred and the number of deaths in the twelve months ending June 30, 1908, is only 252,781. The measures adopted for combating the disease include rat destruction, evacuation of infected quarters, improvement of insanitary areas and inoculation. Grants amounting to $1,000,000 have been made to local governments in this year's budget for expenditure on sanitary improvements for the prevention of plague. During the time the epidemic prevailed the mortality amounted to 2.1 per 1,000 of the population.

Two Notable Octogenarians.

The president and vice-presidents of the Royal College of Surgeons have sent congratulations to two of their ex-presidents, Mr. Thomas Bryant and Mr. Jonathan Hutchinson, on the occasion of their eightieth birthdays. Mr. Hutchinson is still a remarkable example of great intellectual vigor. His weekly clinics at the Polyclinic are as attractive as ever and both by mouth and by pen he teaches and engages in controversy with unabated force. He never tires of fighting for his fish hypothesis of leprosy which, like another Galileo, he has maintained, undeterred in the least by almost universal opposition. This is not to be wondered at, if it is remembered how many of his doctrines he has seen, in a long life of almost unprecedented activity, first received with skepticism and even ridicule, and then gradually accepted. A remarkable fact, showing the accuracy of his observations and conclusions, is that the progress of time has not modified or impaired any of his doctrines. At the Polyclinic he may often be heard quoting from works published by him forty years ago observations which to-day are unmodified by time and as important as ever.

Physician Shot at Bedside of His Patient.

Torquay was the scene of a murderous attack on a physician by a member of the patient's family. For some months a local practitioner, Dr. Hamilton Cuming, had been attending a little girl, the only child of a wealthy Russian gentleman, who is a widower. Two operations had been performed on the child, and it is supposed that anxiety for the child to whom he was devotedly attached, unhinged the father's mind. At 3 a. m. the physician was at the child's bedside, when the father entered the room suddenly, produced a revolver and fired, the bullet entering at one side of his victim's neck and coming out at the other. The Russian allowed himself to be disarmed while the police were being sent for. It is suggested that he fired at the doctor under the delusion that he was administering poison to the child. The doctor is progressing favorably.

Fighting Consumption in Scotland.

The Scottish local government report just issued shows that a very energetic campaign against consumption is being waged by the authorities of that country. Compulsory notification has now been adopted by nine local authorities and voluntary notification by fifty-two. Many authorities hold that if the struggle is to be successful notification must be compulsory and general. Leith now isolates phthisis in spare wards in its infectious diseases hospitals. In Lanarkshire—where the coal miners are specially liable to the disease—the spare wards of the various infectious diseases hospitals are similarly utilized. So successful has the procedure proved that other local authorities are following suit. Another notable success has been achieved by Dundee—the first town in Scotland to adopt a municipal dispensary to combat phthisis. The patients are weighed and visited in their own homes by doctors and nurses. The nurse impresses on the patients the danger of infecting other members of the household and instructs them in the simple measures for preventing this.

National Tuberculosis Conference and Exhibition.

A national tuberculosis conference and exhibition will be held in Caxton Hall, London, in November. In accordance with its title the conference is not merely a medical one, but a national one, and its object is to arouse all classes to the importance of securing better methods of prevention and treatment of tuberculosis. As reported in previous letters, the tuberculosis exhibition which is visiting the principal towns of Ireland has been a great success, and it is considered desirable to follow its example and form a similar exhibition in England. Authorities from different parts of the empire, as well as foreign leaders in the anti-tuberculosis movement, will take part in the conference. Arrangements will be made for foreign and country visitors to inspect the chief sanatoriums and hospitals for consumption in and near London.

Alleged Tuberculous Infection by Brushes.

An action for damages against employers has been brought by a workman under peculiar circumstances. He was engaged in the manufacture of "camel hair brushes" from the remnants of Russian squirrel skins and pointed the brushes by passing them through his lips so as to get them into the ferrule. He began working for the defendants in 1901 and in 1903 began to feel ill. In October, 1905, he was found to be suffering from pulmonary tuberculosis. In his statement of claim he said that the danger of infectious disease arising from the hair as manufactured into "camel hair" brushes was known to the defendants and that the hair should have been disinfected before use. The defendants denied that it was necessary to point the brushes by passing them between the lips and also denied that the hair was dangerous. The evidence for the plaintiff showed that in 1905 the defendants issued a circular stating that the hair used in the brushes was sterilized before being made into brushes so as to render it innocuous. In cross-examination the plaintiff admitted that his sister died in 1888 from acute tuberculosis. Dr. Robert Maguire of St. Mary's Hospital gave evidence that there was danger in using these pieces of hair, whether disinfected or not, and that consumption might probably be conveyed in the hair, and was prevalent in the fur trade in Germany. In cross-examination he admitted that the ironing process in the defendants' factory would kill germs of tuberculosis in the hair. If in seven years no person in the factory except the plaintiff had suffered from tuberculosis that would induce him to believe that there was no great danger from the hair. Without hearing the defendants' case the jury intimated that they had heard enough, and judgment was given for the defendants.

Graduated Work in the Treatment of Consumption.

An interesting demonstration has been given at the sanatorium of the Brompton Hospital for Consumption[1] on the occasion of the visit of Admiral Sir Bowden Smith, General Walker, Dr. A. F. Downes of the Local Government Board and others interested in hospital work. Among the visitors were several hundred old patients who had been discharged from the sanatorium and were earning their living. They were distinguished by a red rosette which they wore, but they looked so healthy that this was the only way in which they could be distinguished from the other visitors. In the best of spirits they spoke of the sanatorium with affection; they contrasted markedly with the patients who were undergoing treatment. They said that they had never felt in better health and were working the usual number of hours at their trades. The peculiar feature of the sanatorium is that the patients are put to such outdoor work as they are capable of performing. This treatment, which marks an epoch in the treatment of tuberculosis in this country, was introduced by the superintendent, Dr. M. S. Paterson. He begins by ordering walking exercise, which is gradually increased to ten miles daily. Gardening with light tools and other suitable outdoor occupations follow. Nothing but good has resulted from this treatment by "graduated work." An explanation of these results is furnished by Dr. A. C. Inman, superintendent of the laboratories of the Brompton Hospital, who has found that the exercise causes an autoinoculation of tuberculin similar to Wright's vaccine treatment, and that a rise in the opsonic index for the tubercle bacillus is produced. At the inspection the patients unfitted for active exercise were to be seen making mats and mops; in the next class the patients walk from one to six miles daily; after that various-sized baskets of earth are carried; this is followed by the use of a small shovel and by hoeing; later a larger shovel is used, and then grass is mowed; finally trenching is done. When a patient is fit to be discharged he works at his trade for six hours daily for three weeks in order that he may be fit to resume it on discharge. A similar course is followed by women, but the implements are smaller. The women keep their own part of the grounds in order, cultivate a small kitchen garden and take charge of the poultry. What the sanatorium is chiefly proud of is a concrete reservoir which Dr. Paterson is careful that all visitors should see. This measures 180 feet in length, 58 feet in width and 13½ feet in depth, and when complete will hold a half million gallons. This has been built entirely by patients and it is expected that it will shortly be opened by the King.

VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, July 28, 1908.

Congress on Thalassotherapy.

A congress on thalassotherapy, or treatment of disease by sea air, sea bathing, etc., will be held next September at Abbazia, near Fiume, on the southern coast of Austria, sometimes called the "Nice of the Adriatic." This kind of treatment has been much in favor in Europe of late and the results have been very encouraging. The two kinds of maritime baths —in a tepid, mild sea with a high percentage of salt, and, on the other hand, in a rough, bracing, vigorous sea of the north— have been found to be particularly valuable in certain neurasthenic conditions. In Austria, especially at Grado on the Adriatic, there is a happy combination of warm sea baths with a high percentage of sodium chlorid and iodid, so that rachitic and scrofulous children are sent out in colonies to this place, to return much benefited in health. At the congress there will be a number of eminent thalassotherapists from England, France and Germany, who will read papers.

The New Medical Regulations.

The board of health has finally completed the new edition of Medical Regulations (*Aerzte-Ordnung*) for the empire. This is intended to abolish many old grievances of the profession, to give practitioners a modern code of ethics and to impose certain duties on them. In this work the board of health has been guided by suggestions received from various Austrian medical councils. It should be remembered that the present *Aerzte-Ordnung* has attained the venerable age of one hundred and forty years, and that it is eighty years since any attempts were made to modernize it. The two main features of the new regulations, which come into force within one year, are the following: 1. The power of striking a doctor's name off the medical register is transferred from the public courts of justice to the legal representatives of the practitioner, namely, the medical council of his district. Cases of breach of professional ethics or any infringements of medical law, aside from transgressions of general public law, are to be considered by a "board of honor," consisting of physicians residing elsewhere than in the accused doctor's district of practice. This board may suspend the physician from practice by striking his name from the register for a year. If the penalty is to be made permanent in such cases, it will be imposed by the public judge. 2. Except for personal disability from disease or conflicting engagement, a physician must not refuse to render medical aid. Repeated, wilful, misleading abuse of the physician's services on the part of the patient is also an excuse for the physician's refusal to attend. Every practitioner must have his name placed on the medical register. The presence of his name on this register entitles and also obliges him to practice medicine. A diploma from one of the seven Austrian universities granting the degree of M.D. is necessary as a proof of the successful completion of a satisfactory medical curriculum. Diplomas granted by foreign universities are not valid here, but will enable the holders to apply for certain facilities of examination, which must be passed by the foreign physician intending to practice here. This, of course, does not apply to physicians studying in Vienna. Simultaneous practice at two different places no matter what the distance between them, is forbidden unless necessitated by public or private appointment. Notifications of infectious disease, hitherto not paid for by the state, will in future be compensated at a rate not yet determined, probably one crown or 20 cents per case.

Two Instructive "Circulating Leaflets."

The *Gesellschaft der Aerzte* (Association of physicians) in Vienna has issued, for distribution in districts where the population is of a class that is negligent about seeking medical advice, two leaflets dealing with the female genitourinary system. One describes the early external manifestations of cancer of the uterus, emphasizes the necessity for distinguishing between ordinary menstrual flow and irregular bloody discharge, and earnestly advises women to resort to a competent medical man at once, if after the age of 35, irregularities of color, smell, or time are noted in the menstrual flow. This leaflet is the result of a great movement, which originated in Germany, for fighting cancer of the uterus by instruction of the people, the midwives and the general practitioners. The other leaflet deals with the subject of genitourinary infection before, during and after pregnancy. The nature of puerperal fever, the various sanitary precautions to be observed during the period of pregnancy, and necessity of medical assistance in any complication are explained. It should be remembered that about 40 per cent. of all labors here are not attended by a physician but by a midwife. The leaflet also explains the destructive effects of gonorrheal affections, their danger for the eyes of the newborn infant as well as for the pelvic organs of the mother, and instructs mothers to seek medical help as soon as any symptoms, acute or chronic, manifest themselves. These symptoms are described in plain language. It is to be hoped that the effect of these leaflets will be beneficial.

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[1] See, also London Letter, THE JOURNAL, July 27, 1907, p. 838, and Lancet, Jan. 25, 1908, abstracted in THE JOURNAL, Feb. 22, 1908, p. 647.

Pharmacology

THE BROADER AIMS OF THE COUNCIL ON PHARMACY AND CHEMISTRY.

TORALD SOLLMANN, M.D.
Member of the Council, Professor of Pharmacology and Materia Medica at the Medical Department of Western Reserve University.
CLEVELAND, OHIO.

(Concluded from page 614.)

XXII. THE FINAL DISPOSITION OF THE PROPRIETARY PROBLEM.

Proprietary remedies are with us to stay, for the present at least. The "proprietary problem" does not mean their suppression, but their regulation. We must insist that we should be told the truth, the whole truth, and nothing but the truth regarding them. This is the sum of the whole matter. We must be told the sincere, honest truth—not merely the technical truth disguised by quibbles, equivocations, implications and reservations. If we but attain this full truth, all the subsidiary problems can be trusted to adjust themselves.

To insure this full and truthful knowledge, three things are necessary:

1. The profession must want it—seriously want it.
2. It must provide and use measures to enforce it.
3. The manufacturers must be willing to grant it.

The Council exists to determine whether the truth is being told. Its rules are merely convenient check-lists for this purpose. Experience has shown that they are feasible and reasonable. The Council is the officially appointed investigating committee of the profession, charged with the duty of applying the measuring rod as exemplified in these rules. It has the best facilities for ascertaining the facts, and for hearing all sides of every case. The manufacturer can lay before it the full details of all the evidence which he possesses, as he would not lay them before the individual practitioner. He has every opportunity to demonstrate that he is telling the truth, in this broad sense. If he succeeds in his demonstration, the admission of his product is at once published. If he can not make good his claims, his product is not entitled to confidence. The attempt to evade the official investigation, the attempt to confuse the profession by meaningless verbiage or by biased half-truths—these are merely further evidences of insincerity.

THE DUTY OF THE MEDICAL PROFESSION.

The Council can investigate, inform, advise—and here its direct powers cease. All further power for good is indirect, and is based on the degree of professional opinion, and especially professional action, by which the Council is supported. The Council can not directly force a manufacturer to act sincerely and honorably. It can reason with him; it can reward by admission; it can threaten with rejection or exposure; but the efficiency of the persuasion, the reward or the threat does not depend on the Council. It depends altogether on the individual American practitioner. The manufacturer who exploits an unworthy article is an enemy of the profession, always, and can be dealt with only as such. The manufacturer who has a worthy article should be a friend of the profession; his success depends on a cordial cooperation. This he knows, and he is perfectly willing to conduct his business as the profession wants it conducted—else he would be forced out of business.

Actions speak louder than words. It matters little what we "resolve"; if we encourage dishonest manufacturers by prescribing their wares, we beget dishonesty. Some manufacturers, indeed, keep up a high standard through their own conscience, or through professional pride. All honor to them. On the whole, however, the exploitation of proprietary remedies is not altruism; it is mainly plain business, to be conducted according to the current rules of the game. What these rules shall be—whether they shall make for fairness or unfairness, sincerity or insincerity, truth or falsehood—this lies mainly if not entirely in the hands of the medical profession.

THE RESPONSIBILITY OF THE INDIVIDUAL.

Nor can we escape this individual responsibility by resorting to abstractions. The problem is eminently practical; and we must conceive our professional responsibility as equally practical. The profession in the abstract, the medical societies and journals, the Council, all the agencies of organization can help merely by informing, awakening and sustaining individual sentiment. Tangible results, however, are not the product of sentiment, but of action. In whatever way we look at it, the responsibility always returns to the individual physician—he is the man who carries the arms. It comes to him, not so much on the day when he votes for a resolution, but every day, every time when he writes a prescription. Whenever he picks up his prescription blank, he is not only directing the treatment of his patient; he is also directing the proprietary business, in all its ramifications; and beyond this, he is directing the future of therapeutics. With each prescription, he renders a decision whether truth or falsehood shall prevail; whether therapeutics shall be scientific or unscientific; whether the abuse of indiscriminate self-medication shall continue or not. It is the aggregate of these daily individual decisions which count; the responsibility rests on each of them. It is not our New Year's resolutions, but our daily actions which run this world.

PRESCRIBING KNOWN REMEDIES.

What then, can you, the individual physician do to further this movement? Everything! Your first duty is plain and simple: Never prescribe any product until you know the truth about it, at first hand, or through a reliable, and therefor unbiased, source; until you know what the remedy contains, and what it may reasonably be expected to do. It does not suffice to have known this "once"; be certain in your mind that you know it at the moment when you prescribe. This you owe to your patient, to your profession, and to yourself. It is as important with official articles as with the unofficial. As regards the proprietary articles, there is but one method of learning the truth, so far as I know, and this is through the reports of the Council.[1] Until an article has succeeded in complying with the rules and thus gaining admission to the list of the Council, it should not appeal to you, no matter what you learn from blotters, detail-men, disguised or undisguised "house organs," subsidized journals, or other biased parties. Turn to such a deaf ear. If every one would take this course and would altogether cease prescribing any remedy which is to him wholly, or in part, unknown, the dishonest proprietary remedies would disappear with one stroke; the worthy would be given a fair chance; the whole problem would be immensely simplified. Is this too much to ask?

TO DETERMINE THERAPEUTIC MERIT.

The next matter would be a judicious selection of the things which remain. A product may be sold in the most proper manner, but it may not be worth much. As I have emphasized so frequently, admittance by the Council implies only honesty, not merit. At some future day, perhaps, there may be sufficient data available to justify a future Council in exacting a high standard of merit—but the time is not yet ripe. At present the Council can help but little in this matter, and the physician must resort to individual study—study in books, but especially applied study. The latter is the most important. Experiment is the only certain way of progress. Those who have the opportunity can render a most important service by determining the field of usefulness of the more promising of the honest new remedies. The reports of their results, favorable or unfavorable, would also aid the Council in exacting from manufacturers definite scientific proof of therapeutic actions as well as of chemical composition.

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[1] The reports of the Council as to the admitted products are embodied in its annual book "New and Non-official Remedies," which can be obtained from the American Medical Association, 103 Dearborn Avenue, Chicago. The price of this book, which is sold at cost, is six cents.

In this clinical work, however, it should be remembered that indecisive experiments are worse than none, for they will only tend to confusion. Those who lack the necessary facilities, material, or time, will do better to hold fast by what has been proven, and leave the task of "trying out" new things to others.

In conclusion, if we, each for himself, insist on the highest standard of honesty in our therapeutics—honesty in ourselves, honesty in the manufacturers and honesty in the products—the end, I feel certain, will be an art and science of therapeutics, such as at present is but a *Utopian dream*.

Correspondence

United States Opium Commission.*

Department of State, Washington, D. C., July 30, 1908.

To the Editor:—In the autumn of 1906 the Imperial Chinese Government issued an edict commanding its viceroys, the Tartar generals and the governors of provinces to join in suppressing the opium habit among the Chinese people. In the previous May the English House of Commons, by unanimous vote, had expressed the opinion that the opium traffic between India and China was morally indefensible.

The British Government entered into an agreement with China, Jan. 27, 1908, to reduce the amount of opium exported from India to China by one-tenth per annum, so that it would be wiped out in ten years. The total amount exported at that time from India to China was about 51,000 chests. That amount is now being reduced at the rate of about 5,100 chests per annum. This agreement is contingent on the Chinese Government being able to show at the end of three years that it has made a sincere and effective effort not only to stamp out the use of opium among the Chinese, but also to stamp out the growth of the poppy. This, of course, will be an immense undertaking for the Chinese Government, as, according to the latest estimate we have, the production of opium in China alone amounts to about 325,000 piculs, while China's importations are about 54,000 piculs, a picul being about 133 pounds.

On March 8 last our very effective prohibition of the illicit use of opium went into operation in the Philippines, as the result of the investigation by the Philippines Opium Commission under the leadership of the Right Rev. Charles H. Brent. While this movement for the suppression of the opium traffic was going on, Secretary Root conceived the idea of helping China, as well as ourselves, by calling an international conference to study the opium question and decide, if possible, on some measure of joint action by the powers especially interested.

The nations invited to this conference were those with territorial possessions in the far east, Great Britain, Germany, France, Portugal, the Netherlands, China and Japan. All these powers consented, in April last, to appoint three commissioners each, to meet the American commissioners Jan. 1, 1909, at Shanghai, China. In the meantime each national commission is to study the question from a national point of view with relation to its social, economic and other sides.

Just before the adjournment of Congress $20,000 was appropriated in the sundry civil appropriation act to cover the expenses of the commission of the United States; and the President appointed the Right Rev. Charles H. Brent as chairman, Mr. Charles D. Tenney, who was Yuan Shi Ki's right-hand man in his *educational reforms in China* and is now the secretary of the American legation in China, and myself. Mr. Tenney is to remain in China and make a thorough study of the opium question there, while I am at present engaged on the study of the question as it affects our national life, and the international aspects of the case.

I am following every method that suggests itself, or is suggested to me, for getting accurate data as to the amount of opium actually needed to supply the legitimate demands of this country. The following table shows our practically net importations of crude opium containing 9 per cent. or more of morphin, of morphin and its salts, and of chandu or smoking opium. Inquiries are being directed to importers, to merchants and to manufacturers of morphin, to retailers, to physicians, to the police departments of our cities, to state and city health boards, in an effort to find out how much opium is licitly and illicitly used.

Years.	*Opium crude, containing 9 per cent. or more morphin.* Pounds.	Chandu. Pounds.	Morphin or its salts. Ounces.
1878-1882	1,341,702.44	375,315.83	71,474.75
1883-1887	1,664,712.25	447,329.53	97,264.25
1888-1892	2,353,307.00	351,556.25	128,155.00
1893-1897	3,125,642.00	481,678.90	84,410.50
1898-1902	1,992,693.63	676,675.50	143,660.50
1903-1907	2,436,771.54	783,258.82	59,060.00

I am getting estimates from manufacturers of morphin and from handlers of opium that anywhere from 60 to 75 per cent. of the crude opium is manufactured into morphin and estimates *that from 50 to 90 per cent. of the morphin so* manufactured is used illicitly, and that its use is on the increase among all classes of people, more especially among prostitutes and their followers, the criminal classes, and what might be termed our fast set. Much of this information is conjectural, of course. If there were some method by which we could get truthful answers from those who sell the drug *illicitly, there would be no great difficulty in the question,* but such answers are out of the question.

The surprising thing is the immense amount of smoking opium we import, paying our duty of $6 per pound, and this in spite of the fact that our Chinese population to-day is smaller than it was twenty years ago. It is impossible, judging from answers to inquiries that I have made among the *Chinese, to suppose that they are using all of it. I have one* estimate that there are over five thousand American smokers in New York city and I have another estimate that there are probably over a hundred thousand Americans who smoke opium.

It is such points as this that must be cleared up and if the members of the medical profession will send to me here *in Washington, well considered statements as to the amount* of the drug that, in their opinion, is illicitly used, it will aid the commission tremendously in its inquiry. The joint conference at Shanghai will study all the compiled data and our instructions are to try to agree on some joint recommendation to the various governments participating in the conference which will lead to international control of the opium traffic. Just what the lines of such recommendation will be it is impossible to say at present, but I have in mind the international regulations which governed the slave trade.

I sincerely hope that we may get the cooperation of the medical profession in this movement.

Hamilton Wright,
Acting Chairman.

Medical Work in Vienna.

New York City, Aug. 12, 1908.

To the Editor:—Your editorial, "Medical Work in Vienna," in The Journal, July 25, is timely and, in the main, correct though based on resolutions, protests and correspondence originating from the discussions of the little colony of American physicians in Vienna. Under the circumstances, as I happen to be a recent "long-timer"—according to your classification, I would add a word of information for the benefit of those who may be interested.

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*See editorial in this issue, page 678.

Vienna is the American physician's medical Mecca, and probably will remain so for a long time. In the first place, clinics are practically under one or two roofs—the *K. K. Allgemeine Krankenhaus* and the *K. K. Poliklinik*. Secondly, most of the eminent professors take more interest in teaching and in the scientific side of medicine than in private practice, while the American professor, even if inclined to teach, has not the time to divert from his lucrative practice. Moreover, the Viennese professor's talent is endowed, as it were, as he receives compensation from the Austrian government.

This little "changing" colony of American physicians who make Vienna their temporary home and medical Mecca, by the way, is not so little—as it numbers between 100 and 200, depending on the season. Moreover, the colony appreciating the increased power and influence resulting from organization, in 1904 organized and founded "The American Medical Association of Vienna," electing Dr. Ravold of St. Louis, who originally suggested the need of such a society, as its first president. Recently the association was incorporated, thus placing the organization on a recognized legal status in the Austrian courts. Article 2 of the constitution of the association states: "The objects of the society are to promote the social intercourse and the scientific advancement of its members, to provide information in regard to the scope and relative value of courses, and to furnish data for the rapid orientation of new members in regard to pensions, rooms, restaurants, etc.," and I may add, incidentally, to protect its members from the instructor who designs the course for the American with one eye on the scientific feature of the course and the other on the American's pocketbook.

Zum Beispiel: Last winter one or two *docents* and *Geheimrats* raised the price of their courses; however, their conduct was reported to the "A. M. A. of Vienna" and as a result the leaders of said courses promptly got together and saw that the courses were not filled—when the aforesaid professors as promptly capitulated and were glad enough to return to the old rate.

The impression "that a knowledge of German is an essential, hardly a course being given in English," is misleading. The fact is, German is no longer an essential and to-day in Vienna the majority, indeed, most of the courses (aside from the university courses), are given in English. And this brings us to the discussion of the relative advantages of the "short-timer" and the "long-timer."

English courses are a distinct disadvantage to the "long-timer" who wishes to acquire the German since any foreign language is more readily assimilated when one hears and speaks it altogether. It is equally hard to avoid English in the pensions as it is in the courses, another disadvantage for the "long-timer" who is anxious to absorb German. However, the most plausible reason of the numerous English courses is German greed for American gold—for if one instructor gives his course in English and another does not, instructor No. 1 fills his course, gathers in the shekels, and No. 2 goes begging; ergo, Nos. 2, 3, etc., etc., are coerced to learn English and instruct in that language. This condition is a great boon to the "short-timer" and he really is the chief factor in its evolution. For this reason alone the "short-timer" (six to twelve weeks) can gain double or triple the amount of information in Vienna than in any other continental city in the same length of time; or, for that matter, in London or Edinburgh, since in the latter places, especially London, much time is lost between hospitals.

Just one other point in regard to the question of "cut-and-dried courses." Your criticism here is in a measure just; however, the leader of a course is privileged and often does dictate both the subject and duration of the course, and I may state in conclusion that this prerogative is being exercised more and more in consonance with the increased power of "the American Medical Association of Vienna," and therefore, I would advise every American on arriving in Vienna to join its ranks and foster himself by fostering this ever-growing, changing, medical colony.

G. E. DAVIS.

Bills Regulating Interstate Traffic in Drugs.

FORT COLLINS, COLO., July 28, 1908.

To the Editor:—I have read in THE JOURNAL, July 25, page 334, the bills introduced into the House of Representatives by the Hon. James Mann to regulate the transportation of dangerous and habit-forming drugs.

While I heartily approve of the general purpose of these bills and believe they would accomplish a great deal of good if enacted into law, still there is an omission in the second one which if not corrected or amended would be a source of great inconvenience and an injustice to many physicians. The first bill is all right in its provisions because it specifically states that: "Provided, however, the foregoing provisions shall not apply to articles sent in the ordinary course of business from manufacturers, jobbers or wholesale dealers to registered retail druggists, *legally authorized practitioners of medicine*, dentistry, etc."

The second bill, however, in its list of exceptions from these prohibitory provisions, fails to include legally authorized practitioners of medicine, and unless amended so as to include these words (legally authorized practitioners of medicine), would hamper the physician in securing supplies and restrict his choice of agents necessary for the interests of his patients.

This omission was doubtless an oversight, but as it is one which if enacted into law would work a serious injury to the physician and as on casual reading it may be easily overlooked; indeed, appears to have been by THE JOURNAL writer himself, who says: "The passage of these bills will not in any way interfere with the legitimate business of physician, manufacturer, wholesale druggist, or pharmacist, as all such busines is expressly exempt." I desire to call the attention of the profession to this omission and its far-reaching consequences and request that you publish this letter in THE JOURNAL.

E. STUVER, M.D.

VENTURA, CAL., Aug. 6, 1908.

To the Editor:—I note what you say in regard to the proposed bills introduced by Congressman Mann. I have read them, and if it is not a scheme to deliver the doctors absolutely into the hands of the retail druggists I am not good at guessing. It may be ignorance on my part to make me see it that way, but such is the case. In regard to the first bill, the reading conveys the impression that the welfare of the people was the prime cause and moving spirit of this enterprising bit of proposed legislation. The second is a bill relating to the transportation of habit-forming and poisonous drugs in interstate and foreign commerce and for other purposes.

The bill recites that it shall be unlawful for any person, firm or corporation to send, carry, ship or bring into any state, territory or the District of Columbia, by freight, express, mail or otherwise, from any other state, territory or the District of Columbia, or from any foreign country, directly to a consumer, or to sell, or furnish, or give away, or have in his or her possession except as provided for in this section in the territories or the District of Columbia, any of the substances named in the bill. It provides that it shall not apply to sales at wholesale, by jobbers, wholesalers and manufacturers to registered retail druggists, or to each other, or to sales made to manufacturers of medicinal remedies, or pharmaceutical preparations for use in the manufacture of such preparations, nor to sales to hospitals, colleges, scientific and public institutions. (*But not a word about the doctor.*)

The bill stipulates that it shall be unlawful for all others, except those excepted above, to introduce or have in possession any of the habit-forming or poisonous drugs, except on the prescription of a legally authorized practitioner of medicine, dentistry or veterinary medicine, and, further, it defines the amount that can be prescribed in each original prescription for a human being. In the case of chloral hydrate it allows only six doses in each original prescription, but in eucain, cocain and morphin the doctor has the glorious privilege of using 240 doses, and in case he prescribes hyoscin he can use 1,200 doses. Why the writer of the bill is so bitterly opposed to chloral hydrate I would like to know.

I note what you say in regard to these bills, and presume that you think the only legitimate way to practice medicine [illegible] that in my practice I prescribe, [illegible] connected with filling prescriptions, [illegible] (I can help it) to have taken away [illegible] filling my own prescriptions; and I [illegible] the assertion that 95 per cent. of the physicians [illegible] United States feel the same way. [illegible] safeguard the health of the public; it is all right to enact laws to punish sellers of abortifacients and [illegible] drugs when sold or used as such, but to handi[illegible] physicians with such legislation is unjust, unwise and a [illegible] of class legislation. J. C. BYNUM.

[illegible] bills referred to by our correspondents appeared [illegible] JOURNAL, July 25, page 335. The first clause of the [illegible] prohibits the interstate traffic in any of the [illegible] except on the original prescription or written [illegible] authorized practitioners of medicine, dentistry [illegible] medicine. As stated in our comments, we as[illegible] of the framers of the bill to be to put a stop to [illegible] of diseases by mail-order methods—in other words, [illegible] quacks—by the use of dangerous drugs. We are [illegible] to see how this interferes with the physician prescrib[illegible] dispensing as he deems advisable. However, certain [illegible] in the phraseology of the bill may be necessary to [illegible] its meaning clear and to secure the desired results.—ED.]

Quinin as a Local Anesthetic.

FREDONIA, N. Y., Aug. 10, 1908.

To the Editor:—Allow me to state that at the annual meeting of the Chautauqua County (N. Y.) Medical Society, held July 14, 1896, I reported that: "Quinin is a safe and efficient anesthetic when used hypodermatically and much safer than cocain."

A report of the proceedings of that meeting in the *Buffalo Medical Journal* of August, 1896, page 32, contains a reference to my report. My attention was called to the matter by an article in THE JOURNAL, August 8, by Dr. E. J. Brown on "Quinin Anesthesia." V. M. GRISWOLD, M.D.

Book Notices

WRITINGS OF SIR WILLIAM BROADBENT. Edited by Walter Broadbent, M.D., M.R.C.P. Cloth. Pp. 444. Price, $3.60. New York: Oxford University Press, 1908.

A volume of carefully selected medical essays by a great man is more valuable than most new text-books, although unfortunately this fact is not so generally appreciated as it should be. For many years, whatever Sir William Broadbent wrote has been read by the profession with avidity, for his authority is undisputed. This volume shows well the breadth of his accurate knowledge. The first seven essays treat of cardiovascular diseases; four of pulmonary diseases; four of renal diseases; fourteen of neurologic subjects and as many more of miscellaneous topics. They have been selected from his contributions to periodical literature and medical societies and date from 1863 to 1907. Although a few were written a generation ago, they have not lost interest in that time.

Many think of Broadbent as especially a writer on diseases of the heart and blood vessels, but this collection and the bibliography appended to it show his literary fecundity and his breadth of knowledge. The first essay in the group of neurologic ones is a reprint of that in which he expounds what is sometimes known as Broadbent's hypothesis, by which he attempts to remove the difficulties attending the application of Dr. Carpenter's theory of the function of the sensori-motor ganglia in the common form of hemiplegia.

These articles are so full of thoughtful criticisms and of practical suggestions, both as to the nature of disease and its treatment that they will be found interesting and useful by studious practitioners of medicine. A few describe curious cases and results; notably, the account of a case of hydrophobia in which the patient recovered and which the author contrasts with a case in which recovery did not take place, and with one that simulated the disease. The brief chapter written in 1866 on a new cure for cancer must also be looked on as a curiosity, but an interesting one.

THE AIX-LES-BAINS THERMAL TREATMENT. By H. Forestier, M.D., Fellow of the Royal Society of Medicine, London. Cloth. Pp. 65. Price, 60 cents. Philadelphia: P. Blakiston's Son & Co., 1908.

The mode of treatment which has been evolved at Aix consists of massage while the douche is playing on the patient. The two are given together, the spout of the douche being cleverly guided by the masseur. The author advises rather copious drinking of a spring water which contains no sulphur and only small amounts of any mineral matter. The spring is known as the *Deux Reines*. A chapter is devoted to the physiologic action of the treatment. Twenty-seven pages consider its adaptability to the treatment of diseases and especially gout, rheumatism and other joint inflammations. The last pages contain information about the excursions from Aix, the amusements and varied practical advice. The best season to visit Aix is from May to October.

GASTRIC SURGERY. Being the Hunterian Lectures, Delivered Before the Royal College of Surgeons of England on Feb. 19-21, 1906, by H. J. Paterson, M.A., M.B., B.C., Hunterian Professor of Surgery and Pathology at the Royal College of Surgeons, Assistant Surgeon to the London Temperance Hospital. Cloth. Pp. 181. Price, $2.00 net. New York: William Wood & Company.

This little volume consists of the Hunterian Lectures for 1906. It deals chiefly with the end-results of operations on the stomach, for ulcer of the stomach, benign obstruction of the pylorus and cancer of the stomach. The author has displayed a great deal of energy and zeal in personally following up cases, in order to determine the end-result and in getting direct and personal communications from other operators concerning their end-results. The deductions may be accepted, therefore, as a good presentation of the subject up to that time. Symptoms and diagnosis are not touched on, but in a short appendix the author gives his own technic of preparing a patient for operation, of performing the operation and of the after-treatment.

THE TECHNIQUE OF VAGINO-PERITONEAL OPERATIONS. By E. Wertheim and Th. Micholitsch. Translated into English by Cuthbert Lockyer, M.D., B.S., M.R.C.P. (Lond.), F.R.C.S. (Eng.), etc. With 138 Illustrations. Cloth. Pp. 323. Price, $7.50. MacMilland & Co., Ltd., St. Martin's Street, London, 1907.

Vagino-peritoneal surgery is the most difficult branch of operative gynecology to describe; likewise, also, it is difficult to understand from a written description of the operations. Hence the fact that the English translation of Wertheim and Micholitsch is now obtainable will be welcomed by those who know of the original work in German and of its practical value. The book consists of but little text—just enough to explain the cuts; but the illustrations are so satisfactory that descriptive matter is unnecessary. There are 138 full page illustrations covering all the operations included in the title, from ordinary colpotomy to complete hysterectomy with the removal of the adnexa. The illustrations include each detail of the operation and are arranged to demonstrate each operation step by step. The book will prove of great value to those who do not have the necessary knowledge of the details of such operations, and who find it necessary to perform them.

Miscellany

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is to prescribe. I will say that in my practice I prescribe, would rather do so than be troubled with filling prescriptions, but I do not propose (if I can help it) to have taken away from me the privilege of filling my own prescriptions; and I will venture the assertion that 95 per cent. of the physicians of the United States feel the same way.

It is all right to safeguard the health of the public; it is also wise to enact laws to punish sellers of abortifacients and habit-forming drugs when sold or used as such, but to handicap physicians with such legislation is unjust, unwise and a rank piece of class legislation. J. C. Bynum.

[The bills referred to by our correspondents appeared in The Journal, July 25, page 335. The first clause of the bill objected to prohibits the interstate traffic in any of the drugs named except on the original prescription or written order of legally authorized practitioners of medicine, dentistry or veterinary medicine. As stated in our comments, we assume the object of the framers of the bill to be to put a stop to the treatment of diseases by mail-order methods—in other words, by advertising quacks—by the use of dangerous drugs. We are unable to see how this interferes with the physician prescribing or dispensing as he deems advisable. However, certain changes in the phraseology of the bill may be necessary to make its meaning clear and to secure the desired results.—Ed.]

Quinin as a Local Anesthetic.

Fredonia, N. Y., Aug. 10, 1908.

To the Editor:—Allow me to state that at the annual meeting of the Chautauqua County (N. Y.) Medical Society, held July 14, 1896, I reported that: "Quinin is a safe and efficient anesthetic when used hypodermatically and much safer than cocain."

A report of the proceedings of that meeting in the *Buffalo Medical Journal* of August, 1896, page 32, contains a reference to my report. My attention was called to the matter by an article in The Journal, August 8, by Dr. E. J. Brown on "Quinin Anesthesia." V. McGriswold, M.D.

Book Notices

Writings of Sir William Broadbent. Edited by Walter Broadbent, M.D., M.R.C.P. Cloth. Pp. 444. Price, $3.60. New York: Oxford University Press, 1908.

A volume of carefully selected medical essays by a great man is more valuable than most new text-books, although unfortunately this fact is not so generally appreciated as it should be. For many years, whatever Sir William Broadbent wrote has been read by the profession with avidity, for his authority is undisputed. This volume shows well the breadth of his accurate knowledge. The first seven essays treat of cardiovascular diseases; four of pulmonary diseases; four of renal diseases; fourteen of neurologic subjects and as many more of miscellaneous topics. They have been selected from his contributions to periodical literature and medical societies and date from 1863 to 1907. Although a few were written a generation ago, they have not lost interest in that time.

Many think of Broadbent as especially a writer on diseases of the heart and blood vessels, but this collection and the bibliography appended to it show his literary fecundity and his breadth of knowledge. The first essay in the group of neurologic ones is a reprint of that in which he expounds what is sometimes known as Broadbent's hypothesis, by which he attempts to remove the difficulties attending the application of Dr. Carpenter's theory of the function of the sensori-motor ganglia in the common form of hemiplegia.

These articles are so full of thoughtful criticisms and of practical suggestions, both as to the nature of disease and its treatment that they will be found interesting and useful by studious practitioners of medicine. A few describe curious cases and results; notably, the account of a case of hydrophobia in which the patient recovered and which the author contrasts with a case in which recovery did not take place, and with one that simulated the disease. The brief chapter written in 1866 on a new cure for cancer must also be looked on as a curiosity, but an interesting one.

The Aix-les-Bains Thermal Treatment. By H. Forestier, M.D., Fellow of the Royal Society of Medicine, London. Cloth. Pp. 65. Price, 60 cents. Philadelphia: P. Blakiston's Son & Co., 1908.

The mode of treatment which has been evolved at Aix consists of massage while the douche is playing on the patient. The two are given together, the spout of the douche being cleverly guided by the masseur. The author advises rather copious drinking of a spring water which contains no sulphur and only small amounts of any mineral matter. The spring is known as the *Deux Reines.* A chapter is devoted to the physiologic action of the treatment. Twenty-seven pages consider its adaptability to the treatment of diseases and especially gout, rheumatism and other joint inflammations. The last pages contain information about the excursions from Aix, the amusements and varied practical advice. The best season to visit Aix is from May to October.

Gastric Surgery. Being the Hunterian Lectures, Delivered Before the Royal College of Surgeons of England on Feb. 19-21, 1906, by H. J. Paterson, M.A., M.B., B.C., Hunterian Professor of Surgery and Pathology at the Royal College of Surgeons, Assistant Surgeon to the London Temperance Hospital. Cloth. Pp. 181. Price, $2.00 net. New York: William Wood & Company.

This little volume consists of the Hunterian Lectures for 1906. It deals chiefly with the end-results of operations on the stomach, for ulcer of the stomach, benign obstruction of the pylorus and cancer of the stomach. The author has displayed a great deal of energy and zeal in personally following up cases, in order to determine the end-result and in getting direct and personal communications from other operators concerning their end-results. The deductions may be accepted, therefore, as a good presentation of the subject up to that time. Symptoms and diagnosis are not touched on, but in a short appendix the author gives his own technic of preparing a patient for operation, of performing the operation and of the after-treatment.

The Technique of Vagino-Peritoneal Operations. By E. Wertheim and Th. Micholitsch. Translated into English by Cuthbert Lockyer, M.D., B.S., M.R.C.P. (Lond.), F.R.C.S. (Eng.), etc. With 138 Illustrations. Cloth. Pp. 323. Price, $7.50. MacMilland & Co., Ltd., St. Martin's Street, London, 1907.

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THE FOLIN METHOD FOR ESTIMATING THE QUANTITY OF AMMONIA IN THE URINE.

Chicago, June 27, 1908

To the Editor:—When I saw the above heading over an article by Dr Buhlig in The Journal, June 27, I thought "Well, finally, I shall know what Folin's method is I read the article twice and when I had finished, I knew just as much about the Folin method as I knew before, *i e.*, practically nothing Will you give a detailed description of the test?

S K

Answer —It is to be regretted that an omission was made in the publication of the article by Walter H. Buhlig on "The Folin Methods of Estimating the Quantity of Ammonia in the Urine" in The Journal, June 27, 1908 Part of the legend was omitted by mistake It should have appeared as given here This makes clear the reference to reagents mentioned in the body of the original article by Dr. Buhlig It might be added that a suction pump is attached to the right hand end of each apparatus, in the Folin apparatus (Fig 1) to draw air through and to carry the liberated ammonia from bottle B into the standard acid, and in the Shaffer apparatus (Fig 2) to make a low pressure so that the liberated ammonia will distill over from flask B into the bottles of standard acid

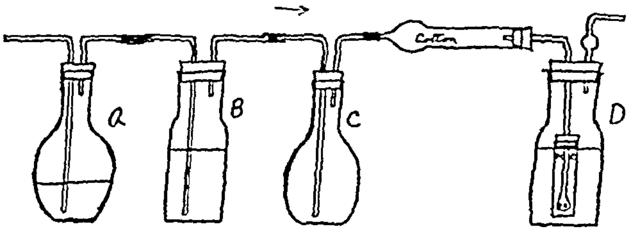

Fig 1 —Apparatus used in the Folin method of determining the ammonia content of urine, with the addition of an air filled flask, C. A, dilute H_2SO_4, B, 50 c c urine, 20 gm NaCl, 20 c c. petroleum, 2 gm Na_2CO_3, added last; C, air flask, D, 30 c c n/5 H_2SO_4 + distilled H_2O

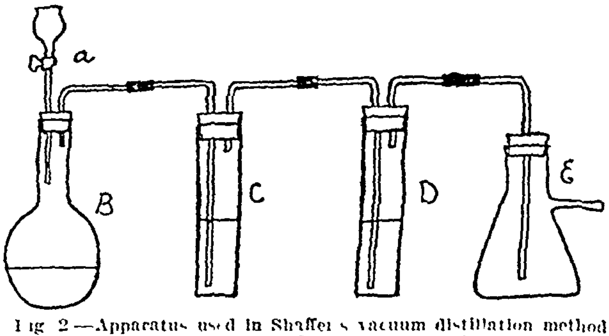

Fig 2 —Apparatus used in Shaffer's vacuum distillation method: B 50 c c urine 15-20 gm NaCl, 50 c c methyl alcohol 1 gm. Na_2CO_3, C, 25-50 c c n/10 H_2SO_4, D, small amount n/10 H_2SO_4 + H_2O

TREATMENT OF AMEBIC DYSENTERY.

Wake Forest, No Carolina, Aug 10 1908

To the Editor:—What is the best treatment for amebic dysentery? What is the prognosis as to cure?

Watson S Rankin

Answer —In the treatment of amebic dysentery a careful regulation of the diet and a cleansing of the alimentary canal by magnesium sulphate or other saline, are rational preliminary measures Ipecac should then be given according to the precautions instituted by those who practice in tropical regions (See abstract of Cantlie's article in The Journal, Sept 7 1907, p 863)

The use of quinin sulphate or bisulphate in injections, is a local measure, which is sometimes promptly successful The solution can only be expected to act on amebæ in the lumen of the intestine and will naturally be most efficient when mucus has been washed away from the walls and the surfaces of ulcerated patches The strength of the solution should be from 1 to 5 000 to 1 to 2 500 and the quantity introduced should be sufficient to fill the intestine as high as ulcers are probably present Thymol, 1 to 2,500, has been used for the same purpose For high injections it is not necessary to introduce the colon tube more than six inches, as it can not be pushed beyond the sigmoid, but it is possible by elevating the hips to make the liquid reach even to the ileocecal valve Too great distention of the bowels should be avoided

When a case of ulcerative dysentery has persisted more than six months the rational treatment is to perform appendicostomy or a right inguinal colostomy and by maintaining an artificial anus give rest and permit thorough local treatment of the colon through the artificial anus

The prognosis of amebic dysentery should be reserved, but the disease is not necessarily fatal even though abscess of the liver has occurred The latter complication, however, greatly increases the seriousness of the outlook

USES OF APOCODEIN, CAULOPHYLLUM AND SODIUM SUCCINATE

Aldens Bridge, La., Aug 11, 1908

To the Editor.—1 I have seen the statement made in current literature, that apocodein is a reliable and efficient purgative when administered hypodermically Will you kindly state whether there have been reports of clinical observations substantiating this claim and if so, give references 2 Is there any proof to support the claim that caulophyllum is a reliable parturifacient? 3 What is the status of the sodium succinate treatment for gallstones?

John H Scates

Answer —1 This action of apocodein appears to be established The British Codex (page 13) says "In the case of healthy people it is generally efficient in producing one or more stools within ten minutes after the injection; but it is only likely to be valuable in therapeutics, for those patients in whom constipation is due to excessive inhibition When constipation is caused by inertia of the muscle it is not likely to be of use"

2 The evidence as to the parturifacient action of caulophyllum is insufficient to warrant such a claim

3 Sodium succinate is not mentioned by standard text books as useful for the treatment of gallstones

IDENTITY OF THYMIC ACID

Springfield, Mass., Aug. 7, 1908

To the Editor:—Is thymic acid identical with thujetic acid of arbor vitæ or some other organic acid? I am unable to find any such acid named in any book on materia medica in the U. S or National Dispensatories or elsewhere I only find thujetic acid from arbor vitæ Dr E Schmoll, of San Francisco, in his paper on gout in The Journal, April 29, 1905, mentions it as helping to keep uric acid in solution in the blood

Daniel E. Kiefe

Answer —Thymic acid is a product of the hydrolysis of thymonucleic acid, which is obtained from the nucleoproteid of the thymus gland Thymic acid is a body containing nitrogen and phosphorus and having the formula $C_{16}H_{26}N_3P_2O_{12}$. It is easily soluble in cold water It is precipitated from its acetic acid solution by peptone and albumin The precipitate is soluble or insoluble with difficulty in hydrochloric acid Thymic acid combines with albuminates to form bodies which are not identical with paranucleins By further hydrolysis it is reduced to thymin, which has the formula $C_5H_6N_2O_2$ So far as we know, thymic acid is not in the market as a therapeutic agent Thymic acid derived from thymus must not be confounded with thymol obtained from thyme, which is sometimes called thymic acid and is referred to under this name in the U S and National Dispensatories Thymic acid is quite distinct from thujetic acid

ANSTIE'S RULE FOR ALCOHOLICS

Wallace, Idaho, July 7, 1908

To the Editor:—Where can I find "Anstie's rule for alcoholics" as used in connection with insurance examinations

Herbert H. Judd

Answer —Anstie's rule concerning the use of alcohol, we believe, was first enunciated by Dr. Francis Edmund Anstie, a London physician, in his monograph on "The Uses of Wine in Health and Disease" (J. S Redfield, N Y, publisher), 1870 Briefly, it is to the effect that the maximum amount of absolute alcohol which can be taken by an adult without injury is one and a half ounces daily This is equivalent to about three ounces of whisky, brandy, gin or rum, about four wineglassfuls of sherry, or other strong wine, to one pint of claret, champagne or other light wine, to three glasses of strong ale or porter, or five glasses of beer or light ale.

LANTERN SLIDES TO ILLUSTRATE SPREAD OF CONTAGIOUS DISEASES

A correspondent desires information as to where he can purchase lantern slides with which to illustrate a lecture to be given before laymen on "The Prevention of the Spread of Contagious Diseases" Similar queries have been received several times and we should be very glad to get information for publication relative to where such slides can be obtained Reaching the laymen through lectures illustrated by lantern slides is happily becoming more and more common and undoubtedly individuals here and there have secured slides as means of illustration that could be put to a wide use if such illustrations could be made obtainable by others. We repeat, we shall be glad to get information from physicians regarding the subject.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, for the week ended Aug. 15, 1908:

Blanchard, Robert M., capt., M. C., leave of absence for ten days is extended twenty days.

Heysinger, James D., capt., M. C., granted leave of absence for fourteen days.

Scott, George H., capt., M. C., granted leave of absence for one month after return of troops from maneuver camp.

Reynolds, Charles R., capt., M. C.; Huber, Edward G., first lieut., M. C.; Lambie, John S., Jr., first lieut., M. C., left camp at Chickamauga Park, Ga., for camp at Fort Riley, Kan.

Crabtree, George H., capt., M. C., left Ancon, Canal Zone, on leave of absence for fifty-four days.

The following named first lieuts., M. R. C., ordered to active duty at the stations where they have been serving as contract surgeons:

Dade, Waller H.
de Quevedo, Luis G.
Wallace, George S.
Jordan, Edward H.
Warringer, Benjamin B.
Hull, Alva R.

Suggs, Frank, first lieut., M. R. C., ordered from Fort Niagara, N. Y., to Fort Washington, Md., for temporary duty during the absence of Capt. Samuel J. Morris, M. C.

Trotter-Tyler, George, first lieut., M. R. C., ordered from Fort Adams, R. I., to Fort Monroe, Va., for temporary duty.

Hammond, William G., dental surgeon, ordered from Fort Logan, Colo., to Denver, Colo., for temporary duty.

Gunckel, George I., dental surgeon, ordered to Fort Oglethorpe, Ga., for temporary duty.

Hill, Eben C., first lieut., M. R. C., ordered to active duty and assigned to Fort Porter, N. Y.

Tignor, Edwin P., dental surgeon, granted twenty-four days' leave of absence.

Birmingham, H. P., lieut-colonel, M. C., *detailed member of examining* board, appointed in par. 28, S. O. 98, April 25, 1908, War Department, *vice* Col. Charles B. Byrne, M. C.

So much of par. 5, S. O. 152, June 29, 1908, War Dept., as directs the officers therein named to report to Col. Charles B. Byrne, M. C., as president of the examining board, is amended so as to direct them to report to Col. Valery Havard, M. C., president of the board, *vice* Colonel Byrne.

Raymond, Henry I., Kendall, William P., Morris, Edward R., Harris, H. S. T., majors, M. C., ordered to report in person, on Sept. 21, 1908, to Col. Valery Havard, M. C., president of the examining board at the Army Medical Museum, Washington, D. C., for examination to determine their fitness for promotion.

Anderson, E. H., first lieut., M. R. C., ordered to return to station, Fort Wingate, N. Mex., from duty in field.

Koerper, C. E., capt., M. C., granted leave of absence from Cuba, to commence about September 11 and ending October 7, with permission to visit the United States.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the two weeks ended Aug. 15, 1908:

Carpenter, D. N., surgeon, detached from the naval station, Cavité, P. I., and ordered home to wait orders.

Morris, L., surgeon, detached from the naval torpedo station, Newport, R. I., and ordered to the naval station, Cavité, P. I., sailing from San Francisco, Cal., about September 5.

Peck, A. E., P. A. surgeon, ordered to the naval torpedo station, Newport, R. I.

Minter, J. M., asst.-surgeon, ordered to the naval recruiting station, Cincinnati, Ohio, when discharged from treatment at the naval hospital, Mare Island, Cal.

Hermesch, H. R., asst.-surgeon, detached from the naval recruiting station, Cincinnati, Ohio, and ordered to the *California*.

Farwell, W. G., P. A. surgeon, detached from duty at Camp Ellicott, Isthmus of Panama, and ordered to the naval recruiting station, Philadelphia, Pa.

Mann, W. L., Jr., acting asst.-surgeon, ordered to the naval hospital, Newport, R. I.

Urie, J. F., surgeon, placed on the retired list from Aug. 1, 1908, in accordance with section 1453, Revised Statutes.

Boyd, J. C., medical director, detached from command of the Naval Medical School Hospital, Washington, D. C., and ordered to continue duties as President of the Naval and Medical Examining Boards at that school.

Urie, J. F., surgeon, retired, ordered home when discharged from treatment at the Naval Hospital, Mare Island, Cal.

Turner, H. W. B., asst.-surgeon, appointed asst.-surgeon from July 20, 1908.

Harmon, G. E. H., medical director, ordered to command the Naval Medical School Hospital, Washington, D. C.

Haywood, A. B., asst.-surgeon, detached from duty with the marine detachment at Camp Elliott, Isthmian Canal Zone, Panama, and ordered to the Naval Recruiting Station, Pittsburg, Pa.

Cohn, I. F., asst.-surgeon, ordered to the Naval Hospital, Mare Island, Cal.

Shepard, G. W., asst.-surgeon, detached from the Naval Hospital, Mare Island, Cal., September 1, and ordered to the Naval Medical School, Washington, D. C., October 1, for instruction.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and other officers of the Public Health and Marine-Hospital Service for the seven days ended Aug. 12, 1908:

Mead, F. W., surgeon, granted leave of absence for one month, from Aug. 26, 1908.

Woodward, R. M., surgeon, granted leave of absence for 13 days, from Aug. 24, 1908.

Cobb, J. O., surgeon, directed to proceed to Chicago, for special temporary duty, on completion of which to rejoin his station at Milwaukee, Wis.

Goldberger, J., P. A. surgeon, detailed to represent the service at the International Fishery Congress, to be held in Washington, D. C., Sept. 22-26, 1908.

Vogel, C. W., P. A. surgeon, relieved from special temporary duty at San Juan, Porto Rico, and directed to report at Bureau, Washington, D. C.

Sweet, E. A., asst.-surgeon, granted leave of absence for 2 months, from Aug. 18, 1908.

Miller, W. W., asst.-surgeon, granted leave of absence for 6 days, from July 27, 1908, under paragraph 191, Service Regulations.

Dunn, James, acting asst.-surgeon, granted leave of absence for 30 days, from Aug. 17, 1908.

Gustetter, A. L., acting asst.-surgeon, granted leave of absence for 2 days, from Aug. 10, 1908.

Hicks, B. I., acting asst.-surgeon, granted leave of absence for 23 days, from Aug. 14, 1908.

McGinnis, R. H., acting asst.-surgeon, leave of absence granted July 17, 1908, for 15 days, from Aug. 17, 1908, revoked.

Seavey, L. T., acting asst.-surgeon, leave of absence granted amended so as to grant him 21 days from Aug. 3, 1908.

Tarbell, B. C., acting asst.-surgeon, excused from duty without pay, Aug. 31 to Sept. 30, 1908, inclusive.

Wakefield, H. C., acting asst.-surgeon, granted leave of absence for 12 days, from Aug. 8, 1908.

Gahn, H. E., pharmacist, granted leave of absence for 11 days, from Aug. 10, 1908.

PROMOTION.

Comfort, Newton C., pharmacist, promoted to pharmacist of the second class.

APPOINTMENT.

Stowe, Dr. Leroy M., appointed an acting asst.-suregon, for duty in the office of the American Consul at Tampico, Mexico.

BOARDS CONVENED.

A board of medical officers was convened to meet at Baltimore, Aug. 12, 1908, for the purpose of making a physical examination of a surfman of the Life-Saving Service. Detail for the board: P. A. surgeon J. T. Burkhalter, chairman; Asst.-Surgeon H. J. Warner, recorder.

A board of medical officers was convened to meet at San Francisco, Aug. 14, 1908, for the purpose of making a physical examination of an officer of the Revenue-Cutter Service. Detail for the board: Surgeon H. W. Austin, chairman; P. A. surgeon W. W. King, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Aug. 14, 1908:

SMALLPOX—UNITED STATES.

California: San Francisco, July 18-25, 2 cases; San Diego County, June 1-Aug. 3, 98 cases.

Illinois: Chicago, July 25-Aug. 1, 2 cases.

Indiana: Fort Wayne, July 26-Aug. 1, 1 case; Indianapolis, July 26-Aug. 2, 1 case; La Fayette, Aug. 27-Aug. 3, 1 case; South Bend, July 25-Aug. 1, 2 cases.

Iowa: Burlington, July 15, 1 case.

Michigan: Detroit, July 25-Aug. 1, 1 case.

Missouri: St. Joseph, July 18-25, 4 cases.

Ohio: Dayton, July 25-Aug. 1, 1 case.

Texas: San Antonio, July 18-Aug. 1, 3 cases.

Washington: Spokane, July 18-25, 7 cases.

Wisconsin: Milwaukee, July 1-Aug. 1, 5 cases.

SMALLPOX—FOREIGN.

Arabia: Aden, June 30-July 13, 6 deaths.

Canada: Halifax, July 25-Aug. 1, 1 case.

China: Shanghai, June 21-28, 2 cases, 1 death.

Egypt: Cairo, July 1-15, 9 cases, 6 deaths.

India: Bombay, June 23-July 7, 34 deaths; Calcutta, June 6-20, 16 deaths.

Italy: General, July 5-19, 72 cases; Naples, July 4-18, 35 cases, 3 deaths.

Java: *Batavia*, June 13-27, 9 cases.

Portugal: Lisbon, July 11-18, 1 case.

Russia: Moscow, July 6-11, 14 cases, 14 deaths; Riga, July 11-18, 5 cases; St. Petersburg, July 4-11, 47 cases, 13 deaths; Warsaw, May 30-June 6, 7 deaths.

Spain: Valencia, July 11-18, 7 cases, 2 deaths.

Turkey: Constantinople, July 5-12, 5 deaths.

YELLOW FEVER.

Brazil: Manaos, June 29-July 11, 5 cases, 7 deaths.

Mexico: Veracruz, Aug. 8, 1 case, Aug. 10, 1 case.

CHOLERA.

China: Amoy, Aug. 11, present; Hongkong, July 13-27, 5 cases, 4 deaths.

India: Bombay, June 23-30, 1 death; Calcutta, June 6-20, 90 deaths; Rangoon, June 13-20, 6 cases.

Russia: Batoom District, Aug. 10, present; Moscow, present; Rostov, present.

PLAGUE.

Azores: Fayal, to Aug. 10, 7 cases, 2 deaths; Terceira, 17 cases, 10 deaths.

Brazil: Rio de Janeiro, July 11-25, 7 cases, 7 deaths.

Chile: Antofagasta, July 4, 3 cases; Iquique, 4 cases.

China: Hongkong, June 13-27, 160 cases, 120 deaths.

Egypt: General, July 8-14, 22 cases, 9 deaths; Alexandria, July 10-16, 4 cases, 2 deaths; Port Said, July 11, 2 cases, 1 death.

India: General, June 21-27, 563 cases, 483 deaths; Bombay, June 23-July 7, 54 deaths; Calcutta, June 6-20, 71 deaths; Rangoon, June 13-20, 40 deaths.

Peru: General, July 6-11, 47 cases, 28 deaths; Callao, 3 cases, 1 death; Lima, 6 cases, 3 deaths.

Marriages

Samuel C. Niemann, M.D., to Miss Carrie M. Frank, both of Dayton, Ohio, August 6.

Henry T. Cummings, M.D., to Miss Laura Madelyn Dowling, both of Chicago, July 7.

James M. Bonnar, M.D., to Miss Jennie L. Forsyth, both of New Bedford, Mass., August 4.

George W. Dainty, M.D., to Miss Bessie Mabel Albee, both of Somerville, Mass., August 5.

John Buchanan Wilson, M.D., to Miss Emily May Trotter, both of Ottumwa, Iowa, August 5.

Charles B. Dirks, M.D., La Grange, Ill., to Miss Alice A. Thompson of Madison, Wis., August 1.

Richard Glenn Kibbey, M.D., Trenton Falls, N. Y., to Miss Agnes Doherty of Utica, N. Y., August 4.

Henry G. Westphal, M.D., Polar, Wis., to Miss Nellie Countryman of Birmingham, Iowa, August 5.

Edward Milton Brown, M.D., Chicago, Ill., to Miss Harriet Chamberlain Drew of Brooklyn, N. Y., August 11.

Monroe M. Ghent, M.D., St. Paul, Minn., to Fräulein Rosa Wilser of Vienna, Austria, at Chicago, Ill., August 12.

Thomas Pugh McCormick, M.D., Baltimore, Md., to Miss Leonora Clifton Franklin of San Antonio, Texas, in New York City, August 5.

Archibald Hodge Logan, M.D., Pittsburg, Pa., to Miss Amy H. Dunlap of Washington, Pa., at Hamills Point, Muskoka, Ont., Canada, August 6.

Deaths

Victor H. Coffman, M.D. Jefferson Medical College, Philadelphia, 1866; surgeon of the Thirty-fourth Iowa Volunteer Infantry for three years during the Civil War; and brevetted lieutenant-colonel for meritorious services at the battle of Mobile; a member of the American Medical Association; and vice-president of the Jefferson College Alumni Association; one of the founders, at one time president, and for many years professor of theory and practice of medicine in Omaha Medical College; for many years chief of staff of St. Joseph's Hospital; said to have been the first practitioner in Nebraska to apply a plaster-of-Paris dressing for curvature of the spine; the first to perform ovariotomy in Nebraska; and the first to perform thyroidectomy in America; died at his home in Omaha, August 4, from multiple neuritis, after an illness of 28 months, aged 68.

George Michael Edebohls, M.D. College of Physicians and Surgeons in the City of New York, 1875; a member of the American Medical Association, American Gynecological Society, and fellow of the New York Academy of Medicine; secretary of the New York Pathological Society, and a member of the German Medical Society; professor of diseases of women at the New York Post-Graduate Medical School and Hospital; attending gynecologist to St. Francis and the Post-Graduate hospitals; and consulting gynecologist to St. John's Hospital, Yonkers, and Nyack Hospital; a specialist in abdominal surgery, whose most noteworthy recent work was the operation of decapsulation of the kidney for the relief of nephritis; died in his apartments in New York City, August 8, from Hodgkin's disease, after an illness of four months, aged 55.

William T. Peyton, M.D. Louisville National Medical College, Medical Department, State University, Louisville, 1889; professor of pathology in that institution from 1890 to 1892, professor of physiology from 1892 to 1894, and professor of principles and practice of medicine from 1894 to 1900; of Louisville; while under arrest charged with performing a criminal operation, is said to have shot himself in the head, and died from the injuries in the Louisville City Hospital, August 10, aged 56.

Frederick Russell Cummings, M.D. Medical School of Harvard University, Boston, 1898; a member of the American Medical Association; member of the assistant staff of the Margaret Pillsbury General Hospital, Concord, N. H.; and medical director of the State Security Life and Accident Company, Concord; died at the Concord City Hospital, August 8, from septicemia, aged 35.

Walter Hurst, M.D. Medical College of Georgia, Medical Department of University of Augusta, 1905; B.S.C. London, 1883; L.S.A. 1889; associate of Owens College, Manchester, England; fellow of the Anthropological Institute and member of the British Association for the Advancement of Science; died at his home in Detroit, Mich., from cerebral hemorrhage, August 6, aged 51.

Wallace Reverdy Bishop, M.D. Medical Department of the Tulane University of Louisiana, New Orleans, 1895; a member of the Medical Association of the State of Alabama; sometime president and secretary of the Talladega County Medical Society; and twice alderman of Talladega; died at his home in that city, August 4, after an illness of several months, aged 35.

Lawrence H. Brundage, M.D. Medical College of Ohio, Medical Department University of Cincinnati, 1890; a member of the Ohio State Medical Association; local surgeon for the Pennsylvania System, and health officer of Xenia; died suddenly from heart disease at his home, August 1, aged 42.

Edwin Augustus Jelks, M.D. Medical College of the State of South Carolina, Charleston, 1860; a surgeon in the Confederate service throughout the Civil War, and one of the most prominent and beloved practitioners of Quitman, Ga.; died at his home, July 28, aged 72.

John Harvey Borden, M.D. College of Physicians and Surgeons in the City of New York, 1903; of Tarrytown, N. Y.; physician to the City Hospital; died August 10, at his home, from an overdose of morphin and strychnin taken to induce sleep, aged 35.

Alexander Hamilton Laidlaw, M.D. Hahnemann Medical College and Hospital, Philadelphia, 1861; formerly professor of anatomy in the New York Homeopathic Medical College; died at his home in New York City, July 29, from senile debility, aged 80.

David Eugene Southwick, M.D. Hahnemann Medical College and Hospital, Philadelphia, 1857; for more than half a century a practitioner of Ogdensburg, N. Y.; died at his home in that city, August 1, from senile debility, after a long illness, aged 76.

Aaron T. Miller, M.D. Cincinnati College of Medicine and Surgery, 1879; a member of the American Medical Association; of Shanesville, Ohio; died in Colfax, Wash., August 7, from septicemia, following a carbuncle of the neck, aged 53.

Russell H. Croxford, M.D. Medical School of Maine, Medical Department of Bowdoin College, Brunswick, 1892; United States pension examining surgeon; died at his home in Brewer, Maine, August 5, after an illness of several months, aged 50.

William E. Pounders, M.D. Chattanooga Medical College, Medical Department Grant University, 1905; a member of the Arkansas legislature in 1901; died suddenly at his home in Sidney, Ark., July 28, from heart disease, aged 33.

Lewis C. Anderson, M.D. Miami Medical College, Cincinnati, 1874; of Greenville, Ohio; a member of the American Medical Association; was stricken with cerebral hemorrhage while operating in Greenville, and died July 24, aged 58.

John A. Morehouse, M.D. Physio-Medical Institute, Cincinnati, 1870; for 46 years a practitioner of Indiana; died at his home in College Park, Huntington, August 1, from cancer of the stomach, after an illness of six years, aged 64.

William H. Webster, M.D. Pulte Medical College, Cincinnati, 1894; of Dayton, Ohio; died at Weller's Camp, on the Stillwater River, north of Dayton, August 10, from valvular heart disease, after a prolonged illness, aged 39.

Thomas Wylie Long, M.D. Columbus (Ohio) Medical College, 1893; of Byesville, Ohio; died in the Keenan Hospital, Cambridge, Ohio, July 29, after an illness of 17 days, from septicemia, due to an operation wound, aged 46.

Lester C. Gates, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1888; a member of the Missouri State Medical Association; was killed in a runaway accident near his home in Jerico Springs, Mo., August 4, aged 40.

Clyde E. Wideman, M.D. Medical College of the State of South Carolina, Charleston, 1884; formerly of Pelzer, S. C.; died in a sanitarium in Asheville, N. C., April 29, from paralysis, after an illness of more than a year

James Francis Brown, M.D. Dartmouth Medical School, Hanover, N. H., 1865; a member of the New Hampshire Medical Society; died at his home in Manchester, July 29, from anemia, after an illness of several weeks, aged 69.

Harry R. Bowers, M.D. Medical College of Ohio, Medical Department University of Cincinnati, 1884; of Columbus, Texas; died in Hot Springs, Ark., where he had gone on account of ill health, July 29, after a long illness.

Norris Freeman Kelly, M.D. Missouri Medical College, St. Louis, 1870; a member of the Missouri State Medical Association; died at his home in Kennett, Mo., August 4, after an illness of nearly four months, aged 58.

Orlando T. Pratt, M.D. Missouri Medical College, St. Louis, 1875; of Compton, Cal.; assistant surgeon to the Pacific Electric Railroad; died suddenly from heart disease in Los Angeles, August 5, aged 55.

K. Akin Smith, M.D. Atlanta (Ga.) Medical College, 1891; of Gainesville, Ga.; a member of the Medical Association of Georgia; was drowned while swimming in the Chattahoochee River, August 7, aged 38.

Anna S. Morgan, M.D. Gross Medical College, Denver, Colo., 1895; one of the staff of visiting nurses of Toledo; died at her home in that city, July 30, from heart disease, after an illness of a few days, aged 42.

John Wickliffe Steeves, M.D. Baltimore University School of Medicine, 1892; of Mardela Springs, Md.; was found dead in his room in Washington, D. C., August 2, presumably from heart disease, aged 58.

Ulof Oscar Robertson, M.D. Hygeio-Therapeutic College of New York, New York City, 1867; of Atlanta, Ga.; died at his country home Roxborough, Ga., August 4, after an illness of six months, aged 62.

T. Brook Thomas, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1888; of Portland, Ore.; died at the home of his brother in Aims, Ore., July 27, after a long illness, aged 50.

Shelby L. Lenox, M.D. American Medical College, Eclectic, St. Louis, 1894; died at his home in Eureka Springs, Ark., August 1, from ptomain poisoning after an illness of two weeks, aged 38.

W. Mumford Ellis, M.D. University of Louisville (Ky.) Medical Department, 1881; died at his home in Riverton, Ala., July 19, from senile debility, after an illness of 23 days, aged 85.

Samuel Eisenbeiss (License, Indiana); for 53 years a practitioner of the state; died at his home in Elkhart, July 20, from carcinoma of the colon, after an illness of four months, aged 74.

Samuel S. Horne, M.D. Medical College of Ohio, Medical Department, University of Cincinnati, 1869; died at his home in Jonesboro, Ind., August 9, after a long illness, aged 65.

Alva Reynolds, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1882; died at his home in Bussey, Iowa, July 30, from heart disease, after a brief illness, aged 48.

Charles N. Cook, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1870; died at his home in Philadelphia, August 1, from heart disease, aged 65.

F. Clarke Mewburn, M.D. College of Physicians and Surgeons of Ontario, Toronto, 1866; one of the oldest practitioners of Toronto; died at his home July 30, aged 91.

B. N. Patterson (Years of Practice, Ky., 1893); for 45 years a practitioner of Ohio County, Ky.; died at his home in McHenry, August 3, from senile debility, aged 80.

William Zimmerman, M.D. University of Würzburg, Germany, 1863; for many years a practitioner of Quincy, Ill.; died at his home in that city July 27, aged 67.

John Haydock Shotwell, M.D. New York Homeopathic Medical College and Hospital, New York City, 1877; died at his home in Belmar, N. J., August 4, aged 80.

Thomas C. McMillan, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1882; died at his home in Falls City, Neb., March 9, after a brief illness.

Lewis Emerson Wheat, M.D. Jefferson Medical College, Philadelphia, 1888; was found dead at his home in Philadelphia, August 12, aged 45.

George E. C. Kelly, M.D. New York University Medical College, New York City, 1892; died at his home in New York City, July 29.

Absalom B. Hostetler, M.D. Eclectic Medical Institute, Cincinnati, 1855; died at his home in Covina, Cal., July 18 aged 82.

Deaths Abroad.

Sir Thomas Stevenson, M.D., R.C.P. University of London, 1864; senior scientific analyst to the home office; an acknowledged authority on medical jurisprudence in Great Britain, and lecturer on that subject in Guy's Hospital Medical School for many years; died at his residence at Streatham, July 27, from diabetic coma, aged 70.

John Talfourd Jones, M.B. University of London, 1863; ex-president of the Medical Society of University College; died at Tunbridge Wells, July 25, aged 71.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

MASSACHUSETTS Board of Registration in Medicine, State House, Boston, Sept. 8-10. Secretary, Dr. Edwin B. Harvey, Boston.

IOWA State Board of Medical Examiners, Capitol Building, Des Moines, September 16-18. Secretary, Dr. Louis A. Thomas, Des Moines.

STATE BOARD REPORTS.

State.	Date of Exam.	Journal Page.	Journal Date.	With Examination Questions.
Arizona	October, 1907	234	January 18	No
	January, 1908	386	February 1	No
	April, 1908	519	August 8	No
Arkansas	October, 1907	61	January 4	No
	January, 1908	1449	May 2	No
	April, 1908	63	July 4	No
California	December, 1907	1070	March 28	No
	April, 1908	153	July 11	No
Colorado	January, 1908	908	March 14	No
	April, 1908	64	July 4	No
Connecticut	March, 1908	1212	April 11	No
Delaware	December, 1907	234	January 18	No
	June, 1908	426	August 1	No
Dist. of Columbia	April, 1907	632	February 22	No
	July, 1907	632	February 22	No
	October, 1907	632	February 22	No
	January, 1908	1143	April 4	No
Florida	November, 1907	234	January 18	No
	April, 1908	242	July 18	No
Georgia	May, 1908	153	July 11	No
Idaho	October, 1907	146	January 11	No
	April, 1908	153	July 11	No
Illinois	January, 1908	988	March 21	No
	April, 1908	242	July 18	No
	May, 1908	519	August 8	No
Indiana	October, 1907	61	January 4	No
Iowa	September, 1907.	632	February 22	No
	December, 1907	632	February 22	No
	March, 1908	1839	May 30	No
Kansas	October, 1907	1142	April 4	No
Kentucky	December, 1907	795	March 7	Yes
Louisiana	May, 1908	153	July 11	No
Maine	March, 1907	713	February 29	No
	July, 1907	713	February 29	No
	November, 1907	713	February 29	No
	March, 1908	1212	April 11	No
Maryland	December, 1907	714	February 29	Yes
Massachusetts	November, 1907	146	January 11	No
	March, 1908	64	July 4	No
	May, 1908	154	July 11	No
Minnesota	January, 1908	1071	March 28	Yes
	April, 1908	1840	May 30	No
	June, 1908	427	August 1	No
Missouri	November, 1907	386	February 1	No
	May, 1908	65	July 4	No
Mississippi	May, 1908	520	August 8	No
Montana	October, 1907	234	January 18	No
	April, 1908	64	July 4	No
Nebraska	November, 1907	473	Feruary 8	No
	February, 1908	1072	March 28	No
	May, 1908	426	August 1	No
Nevada	February, 1908	988	March 21	No
	May, 1908	243	July 18	No
New Hampshire	January, 1908	1071	March 28	No
New Mexico	January, 1908	242	July 18	No
	April, 1908	242	July 18	No
North Carolina	June, 1907	794	March 7	No
North Dakota	January, 1908	386	February 1	No
	April, 1908	1840	May 30	Yes
Ohio	December, 1907	713	February 29	No
	June, 1908	519	August 8	No
Oregon	January, 1908	908	March 14	No
Pennsylvania	June, 1907	551	February 15	No
	December, 1907	551	February 15	No
Rhode Island	January, 1908	387	February 1	No
	April, 1908	64	July 4	No
South Dakota	July, 1907	908	March 14	No
	January, 1908	908	March 14	No
Texas	October, 1907	234	January 18	No
Utah	July, 1907	233	January 18	No
	October, 1907	233	January 18	No
	January, 1908	988	March 21	No
Vermont	January, 1908	909	March 14	Yes
Virginia	December, 1907	988	March 21	No
West Virginia	April, 1908	64	July 4	No
Wisconsin	January, 1908	989	March 21	No
Wyoming	February, 1908	989	March 21	No

Indiana May Report.

Dr. W. T. Gott, secretary of the Board of Medical Registration and Examination of Indiana, reports the written examination held at the State House, Indianapolis, May 26-28, 1908. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 125, of whom 119 passed and 6 failed. Fifteen reciprocal licenses were issued at this examination. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
College of P. and S., Chicago.	(1905) 86; (1906) 86; (1907)	89
Illinois Med. Coll.	(1905) 87; (1906) 79; (1908)	90
Hahnemann Med. Coll., Chicago	(1904)	84
Bennett Coll. of Ecl. Med. and Surg.	(1907)	75
Rush Med Coll.	(1895) 89; (1907)	86
Northwestern Univ. Med. School	(1907)	79
Hering Med. Coll.	(1907)	77
Indiana University.	(1905) 84; (1906) 76; (1907) 77, 81; (1908)	76, 81, 82, 82, 83, 83, 83, 84, 84, 85, 85, 85, 85, 85, 85, 86, 86, 86, 87, 87, 87, 88, 88, 88, 88, 89, 89, 89, 89, 89, 89, 90, 90, 90, 91, 91, 91, 91, 91, 91, 91, 91, 91, 91, 91, 91, 91, 91, 91, 91, 92, 92, 92, 92, 92, 92, 92, 92, 92, 93, 93, 93, 93, 94, 95, 95, 95, 98, 98.
Eclectic Med. Coll. of Indiana	(1908)	85, 89, 90
Physio-Medical Coll. of Indiana	(1908)	88, 88, 89, 90
Hospital Coll. of Med., Louisville.	(1900) 89; (1904) 76; (1907)	82, 87.
Louisville Med. Coll.	(1891) 75; (1907)	88
Kentucky School of Med.	(1907)	77, 80
University of Louisville	(1902) 76, (1907)	84, 91
Johns Hopkins Med. School	(1905)	91
Coll.	(1904) 86; (1907)	82
of Missouri	(1908)	89, 90
	(1907)	92
	(1894)	89
Medical Coll. of Ohio	(1907)	92
Miami Med. Coll.	(1902)	88
Eclectic Med. Inst., Cincinnati	(1908)	87, 89, 90, 94
Jefferson Med. Coll.	(1907)	80
Queen's University, Kingston, Ontario	(1904)	85
Imperial University, Kaan, Russia	(1890)	86

FAILED.

College.	Year Grad.	Per Cent.
Jenner Med Coll.	(1907)	67
Medical Coll. of Indiana	(1904)	70
Eclectic Med. Coll. of Indiana	(1908)	65
Kentucky School of Med.	(1907)	72
St. Louis Coll. of P. and S.	(1907)	56

LICENSED THROUGH RECIPROCITY.

College.	Year Grad.	Reciprocity with.
Hahnemann Med. Coll., Chicago	(1906)	Texas
Rush Med. Call.	(2, 1907)	Illinois
Northwestern Univ. Med. School	(1906)	Illinois
Kentucky School of Med.	(1907)	Kentucky
University of Louisville	(1881)	Kentucky
Detroit Coll. of Med.	(1900)	Michigan
University of Michigan	(2, 1906)	Michigan
St. Louis Coll. of P. and S.	(1893)	Kentucky
University Med. Coll., New York City	(1881)	Kansas
Miami Med. Coll.	(1895)	Ohio
University of Pennsylvania	(1904)	Missouri
McGill University, Montreal	(1888)	Michigan
Trinity Med. Coll., Toronto	(1896)	Wisconsin

Missouri June Report.

Dr. J. A. B. Adcock, secretary of the Missouri State Board of Health, reports the written examination held at St. Louis, June 1-3, 1908. The number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 140, of whom 104 passed and 36 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Total No. Examined.
Howard University, Washington	(1907)	1
National University, Washington	(1895)	1
College of P. and S., Chicago	(1902)	1
Hahnemann Med. Coll., Chicago	(1907)	1
Rush Med. Coll.	(1907)	1
American College of Med. and Surg.	(1906)	1
Kansas Med. Coll.	(1908)	1
University Med. Coll., Kansas City	(1908)	5
University of Missouri	(1906) (9, 1908)	10
Kansas City Hahnemann Med. Coll.	(1908)	1
Homeopathic Med. Coll. of Missouri	(1908)	2
Barnes Med. Coll.	(1904)	1
St. Louis University	(1908)	27
Washington University	(1903) (37, 1908)	38
St. Louis Coll. of P. and S.	(1908)	3
American Med. Coll., St. Louis	(1907) (5, 1908)	6
Hahnemann Med. Coll., Philadelphia	(1908)	1
University of Nashville	(1908)	1
Vanderbilt University	(1908)	1
Meharry Med. Coll.		

FAILED.

College.	Year Grad.	Total No. Examined.
Maryland Med. Coll.	(1902)	1
Washington University	(1908)	4
St. Louis University	(1905) (1907) (5, 1908)	7
Ensworth Med. Coll.	(1908)	3
Barnes Med. Coll.	(1906) (2, 1907)	3
Homeopathic Med. Coll. of Missouri	(1908)	2
St. Louis Coll. of P. and S.	(1908)	3
Kansas City Hahnemann Med. Coll.	(1908)	1
American Med. Coll., St. Louis	(1906) (1908)	2
University Med. Coll., Kansas City	(1908)	3
Creighton Med. Coll.	(1908)	1
Lincoln Med. Coll.	(1907)	1
Meharry Med. Coll.	(1907) (3, 1908)	4

College and year of graduation for one applicant not obtained.

Wyoming June Report.

Dr. S. B. Miller, secretary of the Wyoming Board of Medical Examiners, reports the written examination held at Cheyenne, June 10-12, 1908. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 5, of whom 3 passed and 2 failed. Eleven reciprocal licenses were issued at this examination. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
University of Minnesota	(1905)	75.4
Creighton Med. Coll.	(1908)	75.2
University of Oregon	(1908)	82.8

FAILED.

College.	Year. Grad.	Per Cent.
Rush Med. Coll.	(1883)	62.4
Starling Med. Coll.	(1898)	68.4

LICENSED THROUGH RECIPROCITY.

College.	Year grad.	Reciprocity with.
Hahnemann Med Coll., Chicago	(1893)	Indiana
Bennett Coll. of Ecl. Med. and Surg.	(1897)	N. Dakota
Rush Med. Coll	(1902)	Illinois
National Med. University, Chicago	(1905)	N. Dakota
Sioux City Coll. of Med.	(1902) (1905)	Iowa
University of Iowa	(1905)	Iowa
University of Nebraska	(1907)	Nebraska
Creighton Med. Coll.	(1907)	Iowa
Cleveland Homeo. Med. Coll.	(1876)	Virginia
Ohio Med. University	(1888)	Nebraska

Arizona July Report.

Dr. Ancil Martin, secretary of the Board of Medical Examiners of Arizona, reports the written examination held at Phoenix, July 6-7, 1908. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 8, all of whom passed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
University of Southern California	(1908)	75
Northwestern Univ. Med. School	(1905)	80.2
Bennett Coll. of Ecl. Med. and Surg.	(1905)	76.2
Tulane University of Louisiana	(1905)	78.2
Barnes Med. Coll.	(1908)	75
University of Missouri.	(1908)	75.5
University of Virginia	(1906)	78.6
McGill University, Quebec	(1908)	78.2

North Dakota July Report.

Dr. H. M. Wheeler, secretary of the North Dakota State Medical Examining Board, reports the written examination held at Grand Forks, July 7-9, 1908. The number of subjects examined in was 14; total number of questions asked, 85; percentage required to pass, 75. The total number of candidates examined was 21, of whom 19 passed and 2 failed. Six reciprocal licenses were issued at this examination. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
College of P. & S., Chicago.	(1903) 88; (1907) 76; (1908)	77
Rush Med. Coll.	(1907)	78
Dearborn Med. Coll.	(1906)	75
Northwestern Univ. Med. School	(1908)	80
Keokuk Med. Coll., Coll. of P. & S.	(1904) 85; (1908)	76
University of Iowa	(1907)	87
University of Louisville	(1908)	84
University of Minnesota	(1903) 86; (1907)	85, 88
Dartmouth Med. Coll.	(1903)	89
Cleveland	(1891)	89
	(1908)	86
	(1908)	84
	(1908)	83
Norway	(1902)	83

FAILED.

Bennett Coll. of Ecl. Med. and Surg..............(1907)*
Keokuk Med. Coll., Coll. of P. and S..............(1908)*

LICENSED THROUGH RECIPROCITY.

College.	Year Grad.	Reciprocity with.
College of P. and S., Chicago...(1906) Illinois;	(1907)	Minnesota
Chicago Coll. of Med. and Surg.	(1907)	Illinois
Detroit Coll. of Med.	(1906)	Michigan
University of Vermont	(1899)	Vermont
Wisconsin College of P. and S.	(1907)	Wisconsin

*Percentage not given.

PHYSIOLOGY.

Answer any six questions.

1. Describe the process of digestion from beginning to end. 2 How do the products of digestion find their way into venous blood? 3. Define tidal, complemental, reserve and residual air. 4 Describe the mechanism of voice production, naming the principal organs brought into action. 5. Describe the fetal circulation. 6. Distinguish between paralysis of cerebral and spinal origin in (a) reflexes, (b) nutrition of muscles, (c) electric reactions of muscles. 7. Give the origin and function of the anterior and posterior roots of the spinal nerves. 8. Describe the process of reproduction. 9. Define (a) colostrum, (b) emmetropia, (c) atavism, (d) lochia, (e) osmosis, (f) aphasia, (g) meconium. 10. What are the principal fluids excreted from the body!

HISTOLOGY.

1. Name the different kinds of connective tissue and state where each is found. 2. Give the histology of the lining of the stomach. 3. Describe striated muscle. 4. Give the histology of nerve trunk. 5. Give the histology of the duodenum. 6. Describe minutely a medium sized artery.

CHEMISTRY AND TOXICOLOGY.

1. Define analysis and synthesis as used in chemistry and mention two synthetic organic productions. 2. Give chemical test for pus and mucus in urine. 3. Define acid, base and salt. 4. Your treatment for carbolic acid poisoning. 5. Symptoms of chronic lead poisoning. 6. Treatment of poisoning by bichlorid of mercury.

PRACTICE OF MEDICINE.

1. Give the characteristic differences between diabetes insipidus and diabetes mellitus. 2. Differentiate between cerebral vomiting and gastric vomiting. 3. What are the causes of endocarditis? 4. Give the etiology, symptoms and treatment of cirrhosis of the liver. 5. Give treatment and prognosis of erysipelas. 6. What is prognosis as to the cure of epilepsy? Give the treatment of epilepsy. 7. What are the complications and sequelae of whooping cough? 8. What are the complications and sequelae of scarlet fever? 9. What causes cerebrospinal meningitis and how should it be treated? 10. How should endocarditis be treated?

PREVENTIVE MEDICINE.

1. What two methods can we employ to prevent the occurrence of disease? 2. If you were in charge of troops in the field how would you prevent them from contracting diarrhea and dysentery during the hot months? 3. If the water used was the apparent cause of paroxysmal fevers, how remedy it and from whence your supply? 4. How obviate the danger of infection in communities where smallpox is feared? 5. Assuming that scarlet fever in a patient was contracted in the public schools, how protect the rest of the children? What would you do at the home? 6. Is tuberculosis preventable, and if so how? 7. How prevent the spread of syphilis, if contracted; what strictures would you put on marriage and when only should a person who had gonorrhea marry, and why? 8. Outline a safe water supply system for a community living in a prairie country. 9. Outline a course of treatment to prevent the occurrence of scurvy on land or sea. 10. Typhoid fever, how propagated and your method of prevention?

SURGERY.

1. Describe the different methods of producing local anesthesia. 2. Describe each of the varieties of fracture and give treatment for compound fracture of the leg. 3. Give diagnosis and treatment of hydrocele. 4. What is your treatment for infected wounds? 5. Give etiology and diagnosis of intestinal obstruction. 6. Give diagnosis and treatment of oblique inguinal hernia.

OBSTETRICS.

1. Define the following terms: (a) caput succedaneum, (b) catamenia, (c) galactorrhea, (d) liquor amnii, (e) meconium, (f) sapremia. 2. Give a detailed description of your management of a normal labor. 3. How would you conduct a case of transverse presentation? 4. Give symptoms and treatment of phlegmasia dolens. 5. What are the causes for retained placenta, and how would you treat a case? 6. State the difference between podalic and cephalic version and also the indications for each operation.

EYE AND EAR.

1. Define blepharitis, give causes and treatment. 2. Give diagnosis, cause, treatment and prophylaxis of ophthalmia neonatorum. 3. Enumerate three common errors of refraction and describe their correction. 4. Give causes, symptoms, sequelae and treatment of otitis media. 5. How do you treat impacted cerumen and furuncles of the external auditory canal?

WOMEN AND CHILDREN.

1. How would you treat gonorrhea in the female? 2. What are the indications for curettage of the uterus, and how would you perform it? 3. What symptoms follow displacements and how would you treat them? 4. Give symptoms and diagnosis of cancer of the cervix. 5. Give your treatment for salpingitis. 6. What is the incubation period for scarlet fever; chicken pox; measles? 7. Give your treatment for scarlet fever. 8. How prepare cow's milk for an infant three months old? 9. How would you treat a case of rickets? 10. Give treatment for diphtheria.

MATERIA MEDICA.

1. What mechanical remedies are employed in the practice of medicine? 2. Define materia medica, therapeutics, pharmacy, pharmacopeia. 3. What circumstances modify the effects of medicine? 4. What medicines are administered in the form of powders, and why? 5. Differentiate between infusions, decoctions and tinctures? 6. What are syrups, watery extracts, alcoholic extracts; strength of a fluid extract compared with a tincture? 7. Give a practical rule for graduating the doses of medicine to different ages. 8. Dose of arsenic or iodids for an adult and what time of day administer them and why; when and why employ hypodermic medicine? 9. What are narcotics and what is their therapeutic efficiency? 10. When is opium contraindicated; give indications for its use; how are dilute mineral acids classed and what is their use; what are the vegetable astringents?

NERVOUS DISEASES.

1. Differentiate between: (a) cerebral hemorrhage, (b) cerebral embolism, (c) cerebral tumor, (d) uremic coma. 2. Give etiology, morbid anatomy, symptoms and treatment of tabes dorsalis. 3. Give common names for the following diseases: (a) paralysis agitans, (b) exophthalmic goiter, (c) chorea, (d) graphospasm, (e) posterior spinal sclerosis, (f) tetanus, and give symptoms in full of last named. 4. What is Bell's paralysis? What cranial nerves may be involved? Give symptoms and treatment. 5. Define the following: (a) globus hystericus, (b) megrim, (c) petit mal, (d) ptosis, (e) torticollis, (f) paranoia. 6. Name some of the causes of insomnia and how would you treat it?

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

A Recognized Authority on Medical Quacks.

Champe S. Andrews, for eight years counsel for the New York County Medical Society, under whose legal management the prosecution of quacks in New York was conducted for some time, is delivering an instructive lecture on "Medical Quacks, Their Methods and Dangers," in which he reviews the history of quackery from ancient times down to the present, especially of the last ten years, in which so much has been done to expose and punish frauds, deception and corruption of all sorts. Mr. Andrews' lecture is particularly valuable on account of the fact that it is the result of eight years' experience in hand-to-hand conflict with various quacks. The dangers of quackery, as well as the shamelessness and skill in crime of the charlatan, are shown from actual records of cases which he has prosecuted in New York and Kings County.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H BLACKBURN, DIRECTOR.
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

SUGGESTIONS FOR THE USE OF THE POSTGRADUATE COURSE OF STUDY.

1. Attention is called to the rearrangement of the outline for this year. There are only ten months, instead of twelve, as last year. Each month's outline consists of only four weekly meetings, the fifth weekly meeting in any month to be used for public meetings or a joint meeting with some related society.

The skeleton program which preceded the elaborated weekly outlines for each month has been omitted this year, the leaders and spacing showing the topic for each teacher, who will find the elaboration immediately following the topic. The program for the monthly meeting is added for those societies meeting monthly. A list of suggested reference books is added to each month's outline.

2. *Essentials to a Successful Meeting:* Meet promptly. Arrange that only those who are prepared shall lead in any subject. Allow 45 minutes to teacher, if only one; 25 minutes each, if two; 15 minutes each, if three. Allow five minutes to each member to discuss the subject or to ask questions. Each teacher should quiz on his topic of the preceding meeting as a review and to stimulate a general study of the subject.

3. *Anatomy:* Discuss those structures that will undergo morbid changes as a result of the particular disease under consideration, exhibiting gross and microscopic specimens when possible. Demonstrate fresh specimens from the lower animals, if those from the human are not obtainable.

4. *Physiology:* Study the functions of those organs which undergo changes.

5. *Pathology:* Study the pathologic anatomy and physiology, and their relations to the symptoms presented.

6. *Bacteriology:* Study the morphology and biology of bacteria, and the methods of recognizing and differentiating them.

7. Present clinical cases or brief reports, bearing on the subject, whenever possible.

8. *Treatment:* Study materia medica, pharmacology and therapeutics, exhibiting crude drugs and their U. S. P. and N. F. preparations. Encourage members or classes to carry out experiments on animals in regard to the effects of drugs. Emphasize the work of the Council on Pharmacy and Chemistry. Prescription writing, with blackboard demonstrations, should be made a prominent feature of the course whenever practicable.

9. *Reporter:* It is insisted that there should be a reporter for every society, whose duty it shall be to present a digest or review of the recent literature of the subject of study for that month.

10. Adjourn promptly one and a half hours after the time for the meeting to be called to order.

First Month.

First Weekly Meeting.

Diseases of the Heart:

ANATOMY OF THE HEART.

Exhibit gross and microscopic specimens.

Pericardium. Shape, layers, relations Structure, fibrous and serous layers.

Heart. Size and weight Right and left heart, auricles, ventricles, grooves. Right auricle: atrium, appendix auriculæ; openings, superior cava, inferior cava, coronary sinus, foramina Thebesii, auriculo ventricular: valves, Eustachian, coronary. Right ventricle: size and shape; openings, auriculo-ventricular, pulmonary artery; valves, tricuspid, semilunar; chordæ tendineæ, columnæ carneæ Left auricle size, walls; openings, pulmonary veins, auriculo ventricular; musculi pectinati Left ventricle: shape, size, walls; openings, auriculo ventricular, aortic; valves, mitral, semilunar; chordæ tendineæ, columnæ carneæ.

PHYSIOLOGY OF THE HEART.

The Heart Beat--Musculature of heart: arrangement of fibers, auriculo-ventricular bundle Auricular and ventricular diastole and systole Contraction wave in the heart: origin, course, dependence on musculature, velocity. Change in form of (a) auricle, (b) ventricle during systole. Apex beat: position, causes. Heart sounds: location, duration, pitch, of each; causes of each. Cardiac cycle; events occurring during cycle, action of valves, papillary muscles. Causes of heart beat: (1) neurogenic theory. (2) myogenic theory, factors in favor of each, automaticity of heart, effect of inorganic salts in blood and lymph. Properties of heart muscle; rhythmicity, excitability, contractility, conductivity, tonicity; "maximal contraction," "refractory phase." Cardiac nerves. (1) Inhibitory nerves: vagus, origin, course, kinds of fibers, distribution, effect of stimulation on rate, on force, of heart beat; effect on auricle, on ventricle; heart block; "inner stimulus"; effect on heart metabolism. Reflex inhibition, cardio-inhibitory center, reflex arc, effect on heart "tone." (2) Accelerator nerves: origin, course, distribution, effect of stimulation on rate, on force, of beat. Reflex acceleration, accelerator center.

REFERENCE BOOKS FOR FIRST MONTH.

Babcock: Diseases of the Heart and Arterial System.
Broadbent: Heart Disease.
Nothnagel's Practice: Diseases of the Heart.
Osler: Practice of Medicine.
Tyson: Practice of Medicine.
Anders: Practice of Medicine.
Hare: Practice of Medicine.

Society Proceedings

COMING MEETINGS.

American Public Health Association, Winnipeg, Can., Aug. 25-28.
American Acad. of Ophthal. and Oto-Laryng., Cleveland, Aug. 27-29.
Wyoming State Medical Society, Sheridan, Aug. 28.
New Mexico Medical Society, Albuquerque, Sept. 2-3.
South Dakota State Medical Assn. Yankton, Sept. 2-4.
Washington State Medical Association, Walla Walla, Sept. 2-4.
Medical Society of the Missouri Valley, Council Bluffs, Sept. 3-4.
Colorado State Medical Society, Denver, Sept. 8-10.
Med. Soc. of the State of Pennsylvania, Cambridge Spgs., Sept. 14-17.
American Assn. of Obstet. and Gynecol., Baltimore, Sept. 22-24.
Kentucky State Medical Association, Winchester, Sept. 23-25.
American Dermatological Association, Annapolis, Sept. 24-26.
Con. of State and Prov. Bds. of N. A., Washington, Sept. 25-26.
Internat'l Congress on Tuberculosis, Washington, Sept. 21 to Oct. 12.

MICHIGAN STATE MEDICAL SOCIETY.

Forty-third Annual Meeting, held in Manistee,
June 24-25, 1908.

Election of Officers.

Officers were elected as follows: President, A. I. Lawbaugh, Calumet; first vice-president, J. W. Bosman, Kalamazoo; second vice-president, J. A. Christenson, Manistee; third vice-president, Sarah Chase, Traverse City; fourth vice-president, J. D. Bruce, Saginaw; state secretary, B. R. Schenck, Detroit; treasurer, George W. Moran, Detroit. Delegates to the American Medical Association: A. M. Hume, Owosso; T. A. Felch, Ishpeming; F. W. Robbins, Detroit; S. C. Graves, Grand Rapids. Alternate delegates: A. W. Crane, Kalamazoo; H. E. Randall, Lapeer.

The next meeting of the Society will be held in Kalamazoo in September, 1909.

Problems in Preventive Medicine.

Dr. Herman Ostrander, Kalamazoo, in his presidential address, laid stress on the growing attention of the profession to matters of public health and the increasing tendency to interest the laity in this direction. The education of the people was most needed, and the physician must be responsible for whatever progress was made. The strong movement against tuberculosis, the occasional attacks on unsanitary sections of large cities, the purification of water supplies, the laws providing for meat and milk inspection, child labor, etc., were all problems closely involving the medical profession, but they aroused action only sporadically, instead of leading to some comprehensive scheme of attack. The country needed a healthier race of human beings and the need could be fulfilled by attention to details of hygiene which would promote good physical and mental attributes. There was a large "degenerative" class in the United States, comprising 14 per cent. of the population; this included the insane, feebleminded, epileptics, criminals and tuberculous. Add to these the neurotic, semiinsane and the semiresponsible, and the percentage appeared formidable. All members of this class were unfit to have progeny, because they transmitted tendencies to deviation and disease. The influence of heredity, great as it was, should not, however, be exaggerated, and the gloomy outlook taken by some was unjustifiable. The repetition, for instance, of neurotic traits, of epilepsy, of tuberculosis, in the offspring was more often due to environment, to imitation, injury or infection than to direct transmission. The attempt to reduce the transmission of constitutional weakness by emasculation or the interdicting of marriage was irrational, because the conditions still existed for creating new members of the unfit class. Preventable causes of weak progeny were as follows: Physical and emotional disturbances of the mother during gestation; prolonged or difficult labor and the unskilful use of forceps; improper diet, bad air, undue nervous stimulation; inconsistent precept and noxious example; encouragement of precociousness; failure to exercise restraint and to develop a sense of responsibility. These factors were insufficiently realized, and yet were preventable. Agitation to enlighten the public medically was commendable. Knowledge was more necessary than legislation, and the latter was useless unless the public was aware of its necessity. The functions of health boards must be increased, as well as their cash appropriations. Endowments to study and prevent disease were needed. All the movements in this work, sporadic and disconnected at present, should be correlated and brought under one comprehensive scheme, with consistent purpose and organized administration.

Lymphatic Leukemia.

Dr. Wilfrid Haughey, Battle Creek, said that lymphatic leukemia was rarer than the splenomedullary form, being reported in Heidelberg and Stockholm hospitals from 8 to 9 times among 10,000 patients. In Barcelona but one instance was found among 59,940 patients. Males were more commonly affected than females. The disease had been found in horses, oxen, dogs, cats, hogs and mice. The etiology was unknown. Malaria and syphilis had been mentioned as probable factors. Lowit described an *Hæmatamœbum leukæmia parva intranuclearis* as the cause, but this was not accepted. The first symptoms of chronic lymphatic leukemia were usually bleeding from the nose and throat, followed soon by gastrointestinal disturbances. The bleeding soon ceased, and the cervical axillary, inguinal and mesenteric glands became enlarged, soft, distinct and movable. They varied in size at different times, becoming smaller and harder as the disease progressed. The spleen was sometimes enlarged and the liver usually so. Lymphatic leukemia must be differentiated from Hodgkin's disease. The glands in Hodgkin's disease were harder and larger, and the blood had none of the characteristic changes of leukemia. The number of white and red blood cells showed great variation, but the whites were never so abundant as in splenomedullary leukemia. The lymphocytes were greatly increased in relative proportion, while the other leucocytes were decreased. Eosinophiles and normoblasts were rare. The diagnosis must rest on repeated blood findings. Haughey then reported a case at length, giving a long series of red and differential leucocyte counts, and showing a marked reduction in the number of leucocytes under Fowler's solution, from 68,000 at first to under 20,000. The percentage of lymphocytes had increased and varied between 80 and 90 per cent.

Treatment of Exophthalmic Goiter.

Dr. Jeanne C. Solis, Ann Arbor, stated that there were three principal theories as to the etiology: (1) Toxic, the toxins being derived from disturbances of the digestive tract; (2) thyroid, the symptoms being due to hypersecretion of the thyroid gland; (3) neurotic, there being a disturbance in the relations between the sympathetic nervous system, the pituitary gland and the thyroid. There was a certain amount of pathologic, experimental, clinical and therapeutic evidence to support each of these theories. From the pathologic findings we were inclined to direct most attention to the thyroid, an increased vascularity being practically always found. A review of the literature showed that in all the successful methods of treatment the decisive factor was the restriction of the vascularity of the thyroid. The pros and cons of operation were discussed. The author advocated the use of electricity, emphasizing the benefit derived from the direct current. This contracted the walls of the blood vessels, thus reducing the amount of blood which flowed through the thyroid, as well as having a nutritive effect on the glandular tissues. Dr. Solis applied electricity in the following manner: The cathode is placed on the back of the neck, while the anode is applied to the gland and to the vessels of the neck. The current is gradually increased from 15 to 25 milliampères. The anode is held in one spot from three to four minutes and then moved. Treatments are fifteen minutes in length and given daily at first; later every other day or three times a week as long as the rapid pulse, enlarged gland and exophthalmos continue. The pulse is usually decreased from 15 to 20 beats, which diminution lasts for an hour or more. Three illustrative cases were cited.

Diagnosis of Esophageal Obstruction.

Dr. George Dock, Ann Arbor, said that obstruction of the esophagus occurred oftener than was generally believed. Due attention to points of diagnosis would reveal the condition oftener and earlier and save more lives than in the past. The condition was most commonly mistaken for phthisis, cancer of the stomach and gastric catarrh. Careful history-taking was important; there was nearly always a definite complaint of difficulty in swallowing; later regurgitation usually ensued, though sometimes it was the first symptom: regurgitation was frequently described as vomiting and one should question carefully in this regard; it occurred usually ten or fifteen minutes after eating, and in advanced cases mucus might be present in large amounts. The occurrence of either dysphagia or regurgitation should suggest, first, an examination to determine whether the trouble was caused by a tumor of the neck, lordosis, mediastinal tumor, aneurism, pericardial effusion, congenital, traumatic, or caustic stricture, or a neurosis; second, an instrumental examination. In the latter procedure the flexible stomach tube was the first instrument to be used, but always with caution, especially if aneurism be suspected. If obstruction be met, its distance from the teeth was measured by the tube; gentle efforts should be made to reach the stomach; if this be impossible, aspiration should be done to obtain any material that might collect above the obstruction, for chemical and microscopic analysis. If the tube revealed nothing or insufficient information, bougies were employed, the largest first. One should attempt to determine the caliber of the lumen and the length of the obstruction, as well as the existence of spasm, which frequently added to the constriction of organic lesions. The nature of the obstruction, if not already plain, should be sought in careful details of history; hysterical stigmata or history of shock, trauma, etc., accompanied esophagismus; cachexia and emaciation accompanied cancer; sex and age were factors. The esophagoscope was an excellent aid to diagnosis and ought to be used whenever possible. The existence of dilatations and diverticula was always a possibility to be considered.

(To be continued.)

MEDICAL SOCIETY OF NEW JERSEY.

One Hundred and Forty-second Annual Meeting, held at Cape May, June 18-19, 1908.

(Continued from page 620.)

Prevention and Treatment of Tetanus.

Dr. J. Harris Underwood, Woodbury, considered the most reliable germicide in these cases to be a solution of bichlorid of mercury. Pure carbolic acid should not be used, because it sealed up the bacilli by coagulating the albumin of the tissues. Patients with superficial wounds should at once receive an injection of 10 c.c. of antitetanic serum. The treatment after the development of the disease was directed to controlling spasm, overcoming the toxins, and supporting the patient's strength until the symptoms subsided. For the first, chloral and bromids were valuable; for the second, the serum. Two cases of cure in patients with very severe attacks were reported. In the Cooper Hospital, Camden, the mortality had been from 80 to 90 per cent. before the use of antitetanic serum; and 40 per cent. since.

DISCUSSION.

Dr. George E. Reading, Woodbury, said that the value of the serum treatment for tetanus was best shown by the statistics of the St. Louis Hospital, where, prior to 1907, injections were not used until the symptoms of the disease had developed. In that year they began to inject 10 c.c. of antitetanic serum in every suspicious case. Formerly there had been many cases followed by death after every Fourth of July; but this year no cases of tetanus developed. Even negative evidence as comprehensive as this, said Dr. Reading, acquired a great deal of weight. He thought it would be well for all hospitals to adopt the plan of giving a preventive injection to each patient whose case may be open to suspicion. In cases in which serum treatment was not available, Dr. Reading had seen good results from carbolic acid treatment. The statistics from its use abroad were good; and he thought that if it were more generally tried here they might be good in this country. He had seen a number of suspicious cases treated by thoroughly washing out the wound with peroxid of hydrogen, and none were followed by tetanus.

Dr. J. H. Bradshaw, Orange, considered it unfortunate that in the treatment of tetanus after the symptoms have developed, the remedies given are almost as dangerous as the disease. The huge doses of morphin, chloral, and other drugs administered would often kill a person in good health.

Dr. James S. Wrightson, Newark, said that the use of the serum certainly does cure some patients. In one patient treated at the City Hospital of Newark, he had no doubt that the outcome without this treatment would have been fatal. The cost of the serum used in this one case was $375.

Acute Intestinal Obstruction.

Dr. Robert M. Curts, Paterson, confined himself to a few interesting points: The importance of early recognition of the condition and of surgical treatment within thirty-six hours; the relative frequency of the condition, there being one death from it in every 300 to 500 deaths from all causes; the helpfulness of having a good mental picture of the intestines; the mortality in the various forms of acute obstruction; the ages of the patients in the various kinds; and where the knowledge of the physician ends and that of the surgeon begins. The prognosis was always grave, the only hope being in surgical treatment. Researches had given little clinical aid to the diagnosis. Acute intussusception was the form most readily diagnosed, being the only one in which the pathologic and anatomic relations could be made out with any degree of certainty. The treatment was immediate abdominal section. It was impossible to make a diagnosis of any particular type before operation, and quite unnecessary. Attempts to do so only delay what should be an early procedure. The two most important symptoms were severe abdominal pain and inability to pass flatus. The first was common in other visceral diseases, but the second was true only of acute intestinal obstruction.

DISCUSSION.

Dr. J. W. Harvey, Orange, said that no condition required more accurate and certain diagnosis or more generous early surgery than acute intestinal obstruction. The diagnosis was made much less frequently to-day than twenty years ago, and operations for its relief were less common now than formerly. Many cases of abdominal diseases that were formerly allowed to go on to obstruction were now cured before that symptom appears, and the proper treatment of others relieved the obstruction. On the other hand, a new fruitful cause of obstruction was presented by the effects of laparotomy. Dr. Harvey agreed with Dr. Curts that operation, to be successful, must be done in the first twenty-four hours; and he did not see the advantage of first attempting any other method of forcible reduction. The most important point to decide was whether one shall do a complete or an incomplete operation. Another point was what shall be done to insure the return of normal peristalsis; and just how much evacuation of the bowel would be required to relieve the obstruction.

Dr. James S. Brown, Montclair, said that a phase of the treatment of intestinal obstruction was that of distension. A Moynihan tube was placed in the intestines, which were then strung on it. By this means, instead of there being a mass of distended loops of intestine, the bowel was flat. The abdomen could then be entered with comparative ease to seek for the cause of the obstruction.

Remote Pain Following Abdominal Operations.

Dr. William E. Darnall, Atlantic City, confined his attention to the pain that persisted after the patient had left the hospital and come under the care of the attending physician, who was worried because the operation had not relieved the patient as he had hoped. This pain usually disappeared gradually, but sometimes persisted indefinitely. When a second operation becomes necessary, observation would show that the condition was due to adhesions. In trying to remove pathologic structures, the surgeon sometimes forgot that it was important to consider the future welfare of the patient and to try to prevent the occurrence of these symptoms following the operation. The bowels should be handled as little and as gently as possible, and should be protected with compresses moistened with hot salt solution. Every effort should be made to eliminate the possibility of the formation of postoperative adhesions. Every clot left might become an organized adhesion or the focus of infection. Abdominal surgery should not be attempted unless the muscles were relaxed and pliable. The incision should be made so long that it would not need to be stretched with retractors. Any raw surface in the abdomen left exposed should be carefully covered. Patients measured the gravity of their condition by the amount of pain they suffered; and if the adhesions produce more pain than did the original condition, they felt that the operation had done no good.

DISCUSSION.

Dr. E. Stites, Bridgeton, said that in estimating the intensity of pain or its diagnostic value, one must remember that reaction to it varied almost indefinitely in different individuals. It seemed to him that one should consider whether the pain was a continuation of a previously existing one or an entirely new symptom developed postoperatively. He thought that its character should likewise be considered, and its location, together with the presence or absence of fever. Severe pain of any other than the neurotic form seldom presented itself as a sole symptom; and it seemed to him that when other symptoms of the presence of adhesions were absent, operation for the relief of postoperative pain should not be undertaken. The stimulus of an operation added to the already unstable nervous centers could not help but awaken many reflexes.

Dr. W. E. Darnall said that all must appreciate the fact that pain was too big a subject to make a single reference to it; for it would take too long to consider even a single group of its causes. The subject took in the whole field of medicine and surgery. Neurotic pain was a very wide field, particularly that associated with hysteria and that in morphin habitues.

Dr. E. J. Ill, Newark, said that his experience had been that such operations never produce pain unless they displaced an organ so as to impair its mobility.

Acute Anterior Poliomyelitis.

Dr. David T. Bowden, Paterson, considering the etiology, the symptoms, the different stages, the diagnosis, prognosis and treatment. In conclusion he emphasized the fact that no operation should be performed, except possibly a tenotomy, until some years after the primary infection, when all possible chance of recovery had passed. No operation should be attempted without a thorough electrical test having been made and a possible destruction of the muscle demonstrated.

DISCUSSION.

Dr. F. D. Gray, Jersey City, speaking for Dr. H. J. Bogardus, gave statistics of 872 cases of infantile paralysis treated at the clinic of the New York Orthopedic Hospital in the period from Jan. 1, 1897, to Dec. 31, 1906. He stated that it had been estimated that half the crippled children wearing braces were doing so as the result of this disease. It had been hoped, he said, that by a study of an epidemic of the disease occurring in a crowded American city, much might be learned concerning it; but, unfortunately, little had been added to the sum total of the previously existing knowledge regarding infantile paralysis.

Dr. D. E. English, Millburn, said that for some time he had suspected anterior poliomyelitis to be an infectious disease, although this had not yet been proved to be the case. The few instances of the disease that he had seen had borne out the hypothesis of Dr. Bowden that it had some connection with acute or chronic digestive troubles. Dr. English's patients had been very much constipated. In one case there was fecal impaction, and he extracted from the intestine a quantity of chestnut shells, peanut shells, and pieces of coal. He thought that it would be interesting to know whether or not this depraved appetite had any connection with the disease. In all the few cases in babies that he had seen the infants had been fed with beer; and he thought that the effect of the alcohol on the infantile or childish system might have some bearing on the case.

Dr Thomas P Prout, Summit, said that the results of nerve grafting do not carry out the expectations that were formed regarding it in the first place, and he thought that probably the best that could be reported about it was simply an improvement in the general nutrition of the limb, which, of course was worth something Associated with this improvement there was often for a long period an added palsy, on account of the engrafting of dead nerve tissue into living structure He thought it wrong to torture these children with electricity In the early stages, he said, the cases partake largely of the nature of a neuritis, and to stimulate the surface of the body with electrical currents during the course of a neurotic process had a torturing effect Electrical treatment, therefore, should not be employed until four weeks have elapsed He thought that it would be found that these cases belong to the great number of latent infectious processes that become active only through lowered vitality and resistance on the part of the child, due to various causes

Dr Martin J Synnott, Montclair, referred briefly to one case that seemed to him to have some bearing on the etiology of the disease The symptoms in this case pointed strongly to typhoid infection A blood examination disclosed an enormous number of malarial parasites of the estivoautumnal variety The paralysis developed on the third day of the fever, and the subsequent course clearly pointed to poliomyelitis Dr Synnott wondered whether or not the malarial parasites could have had any bearing on the poliomyelitis His experience had been that these cases improve as rapidly under the stimulation of vibratory massage as under either galvanism or faradism, and with less discomfort to the patient

Dr W M Leszynsky, New York, said that anterior poliomyelitis seemed to him a bad name for the cases that occurred during the recent epidemic, because a large number did not correspond to the usual type of this disease A number showed the characteristics of an encephalitis or a myelitis and, to a slight extent, of a neuritis He agreed with Dr Prout in regard to the treatment He did not think it necessary to examine thoroughly by means of galvanism in order to determine the presence of the reaction of degeneration He scarcely considered it wise to wait until deformity had developed before instituting the orthopedic plan of treatment One should accept the fact that a child with paralysis of the foot was likely to have foot drop, and should immediately place the foot in an apparatus to prevent the stretching of the anterior group of muscles

Dr J C Edwards, Williamstown, said that, when used at all, electricity should be applied in its mildest form If the muscle should refuse to respond after half a minute, the current should be stopped, as the already weakened muscle had been tired out A few months ago he had a patient who would eat peanut shells, chalk and coal, and relish them, but he had a good deal of gastric trouble

Dr D T Bowden said that he had thought that he had indicated in his paper that electricity should not be used until tenderness has subsided An amount sufficient to produce contraction should be applied The idea of the therapeutic effect of electricity was merely massage of the muscles This was why the orthopedic treatment had been recognized as of more importance than the electrical or neurologic, it placed the child in a position to use any voluntary power that it might have In the chronic stage, as soon as the child was able to carry a supporting apparatus it should be put on Dr Bowden thought that no one could reasonably question the benefit of electricity

Modern Methods of Treatment of Posterior Displacements of the Uterus.

Dr J Watson Martindale Camden pointed out the advantages and disadvantages of each operation and the conditions under which the various operations were indicated The objects of operations for posterior displacement of the uterus were repair of the pelvic floor and the bringing forward of the uterus into a position of anteversion

DISCUSSION

Dr A T Staehlin, Paterson, said that in complete procidentia in a woman beyond the menopause he would recommend vaginal hysterectomy, rather than the procedure recommended by Dr Martindale Dr Staehlin considered chlorosis an important factor in the production of retroflexion He believed the Gilliam operation gave the best satisfaction as a method of restoration, and always employed it He did not think so much of the Alexander operation as of any of the others mentioned, and wished to know whether in performing it Dr Martindale cuts off the round ligament after it is fastened

Dr Martindale said that he cuts off the redundant portion

Dr Staehlin suggested that it be left, giving as his reason that if, after it has been removed, anything should happen to the ligature, more trouble would be caused than was present in the natural state before operation He then referred to the difficulty of finding an adequate means of restoring the pelvic floor From the fact that there are so many methods of restoring the perineum, he thought it might be inferred that few of these were adequate A superficial tear down the median line might be easily overcome, but when the tear was lateral and very extensive, there was a tendency to procidentia In order to have a successful result, the perineum should be restored in an anatomic way He considered preliminary amputation of the cervix a good point, and thought that the sound had proved to be a pernicious instrument If a perforation be present, he believed in awaiting developments, as he felt convinced that in many cases of rupture of the uterus followed by small perforation the wounds have healed spontaneously

Dr E J Ill, Newark, said that he did not believe that the anatomy of the condition is thoroughly understood In his experience, retroposition of the uterus had produced a large number of pelvic symptoms with a pathologic interest He considered the Alexander operation ideal, so far as anatomic condition goes, but thought the Gilliam the most practical By his own modification of this procedure, Dr Ill and his assistants had operated on about 500 of these patients, with less than 1 5 per cent of failures, and he thought that no other operation could show so small a percentage Gilliam had told Dr Ill that he was about to give up the operation that goes by his name, on account of the large number of suppurative cases that he had had Dr Ill's modification overcomes this tendency, and he thought that its only possible danger was that the ligament might not be pulled out far enough If it is pulled out so far as to prevent the tube from coming near the opening of the peritoneum and forming an adhesion there will be no subsequent pain Dr Ill has seen a great many labors following his operation He said that he had seen more damage done by ventral fixation than could be made good in a hundred years

Dr Gray said that he had wondered at not having heard some mention of the Webster operation, which had appealed to him as being satisfactory, simple and effective He made a plea for more sections in cases of posterior displacement

Dr J M Rector, Jersey City, said that Dr Martindale did not seem to consider the fact that other things cause displacement besides gravity, such as chronic metritis and salpingitis, with adhesions In order to relieve these conditions, something else than the procedure described by Dr Martindale was necessary All the operations mentioned were successful when applied to the proper conditions The operation must be suited to the case Dr Rector also remarked that Dr Martindale had not stated that one must take into consideration the outlying conditions that have brought about the changes giving rise to the retroverted uterus, and said that if we were to advise looking into these conditions and treating them before operation the results would be better

Dr Chavanne remarked that it is the duty of the surgeon to make sure that his diagnosis is correct before inducing a patient to submit to operation He thought that many physicians have not sufficient sympathy with patients suffering from hysteria He was satisfied that displacement of the uterus is often caused by the prudery of American women

Any medical man who does not take into consideration the history of the patient, her susceptibility, her emotions, and her occupation, before making a diagnosis, is committing an error.

DR. HARVEY said that he had not heard the part of the paper in which Dr. Martindale had mentioned the beneficial effect of pregnancy on retrodisplacements. He thought that the general practitioner would bear him out in the statement that pregnancy has often cured retrodisplacements that have existed for some time.

DR. E. J. ILL, Newark, stated that Munde had published statistics in relation to this point, showing that only 3 per cent of such patients recover after pregnancy.

DR. MARVEL said that in every retrodisplaced uterus there is a prolapse, and the fundus is lower than it should be. An operation that will elevate the fundus of the uterus should be done. He admitted having had one accident whose cause Dr. Ill had cleared up for him, that of getting necrosis in fastening the round ligament in the Alexander operation. The stump of the ligament was, however, fastened sufficiently to the fascia of the rectum to hold the uterus in position. In ventral suspension this difficulty is corrected, and the danger of its occurrence is much reduced in Dr. Ill's modification of the Gilliam operation. If adhesions were formed between the anterior surface of the abdomen and the fundus of the uterus, these adhesions could, Dr. Marvel thought, be limited. All things being equal, he considered Dr. Ill's modification preferable to the original Gilliam operation. The fact that it elevated the uterus from its displacement made it the one in which there was the least likelihood of hernia or necrosis.

DR. DRAKE, Tennessee, said that imaginary diseases were real, material entities with a pathologic basis, and the trouble could often be removed by diverting the patient's attention from the conditions that give rise to the material images in the brain. The reason for the existence of so many operations for procidentia and for appendicitis in modern times and so few in old times was that attention was now called to these particular organs. If the attention of patients could be turned away from the internal organs, Dr. Drake thought there would be fewer pathologic conditions.

DR. JOHN P. REILLY, Elizabeth, said that the discussion ought not to be closed without further consideration of the shortening of one or both uterosacral ligaments, and that he would be glad to hear more from Dr. Ill on this subject, because unmarried patients had persistent dysmenorrhea, and married patients dysmenorrhea with sterility. All the suspensions done to relieve ordinary displacements would not cure this class of cases. All the ligaments on the front may be shortened and the floor repaired, but the patient would not be cured. Dr. Reilly thought it strange that silk had continued to be used so long in suspensions, as catgut would give rise to much less suppuration and afford all the fixation necessary. It had occurred to him that in the method spoken of by Dr. Ill the posterior parietal peritoneum was lifted from the fascia below more than was necessary, and that this might do harm. He wished to know whether the posterior parietal peritoneum was stripped from the round ligament as it was brought through. He had stripped the peritoneum back so that he had the clear round ligament. By so doing he thought that the pushing upward of the peritoneum could be avoided.

DR. E. J. ILL, Newark, said that removal of the ovaries was the operation most commonly performed for a short uterosacral ligament. In the physical examination the finger was passed into Douglas' cul-de sac until it strikes the tense cord, which was slightly pressed on and found to be sensitive. In the pelvic cavity there should be no organ sensitive to slight pressure. When the patient was put under ether, a finger was introduced into the vagina behind the uterus. The uterosacral ligament was caught on the end of the finger and gradually brought outside. By massage the ligament was lengthened, so that it was no longer tense and sensitive. As an additional safeguard against contracting it was kept on the stretch for a few days by thoroughly dilating the uterus. Dr. Ill always suggested that for two months following the operation the patients should use douches while on the knees and elbows, so as to keep up a little stretching of the ligament. Sometimes a second operation was necessary, and once a third one. Two symptoms that should lead to a guarded prognosis were sensitive spines and coccygeal pain. The pain on either side of the back and inability to walk were overcome by the treatment.

DR. RICHARD C. NORRIS, Philadelphia, said that sufficient stress had not been laid on preliminary treatment of the supports of the uterus and of the uterus itself. He stated that years ago Emmett cured many displacements by careful plastic surgery followed by the use of the pessary. Dr. Norris was inclined to think that these operations to correct displacement had but temporary effect. In regard to the selection of the operation for this purpose, he agreed that the round ligament was the essential factor to be used, and that the portion of it that was the thickest and the nearest to the uterus was best fitted to accomplish the work. At the Preston Retreat, in Philadelphia, there have been 3,500 confinement cases during the last fifty years, and Dr. Norris had found that in patients in whom ventral fixation had been used complications frequently occurred. This had led him to believe that the operation ought to be abandoned. Even the technic that prepares for suspension, he said, might eventuate as fixation. It was his opinion that an operation for holding the uterus in position by means of the round ligaments would be devised that would not fasten the uterus to the abdominal wall. He had had no difficulty in regard to sloughing or hernia in either the Gilliam or the Simpson operation. He had used the procedure suggested by Dr. Ill, which had appealed to him surgically and clinically as the most satisfactory. He was surprised that the Alexander operation was not appreciated, as he believed that there exists a class of uterine displacements in unmarried women in whom this operation found a wide field of usefulness. When performed with careful technic, there was no danger of sloughing or of infection.

DR. J. W. MARTINDALE said that if vaginal hysterectomy were done in cases of procidentia the condition would not be cured. It was absolutely necessary to do the plastic work before attempting any of these operations. He said that he would feel a little hesitation about employing the method of treating the tender and shortened uterosacral ligament advocated by Dr. Ill unless it were done by a skilled operator, as some other structure might be mistaken for the ligament and damage produced by the massage. Dr. Martindale thought that the proper treatment for a case of chronic metritis or salpingitis with adhesions would be supravaginal hysterectomy, which was a safer procedure than double oöphorectomy with an oöphorosalpingectomy. He had seen cases of inflammation of the broad ligaments and the ovaries in which, when the finger was pushed into the body of the uterus, the whole structure was found to be broken down. Dr. Martindale had seen the good effect of pregnancy on backward displacement of the uterus exemplified. One of the disadvantages of ventral suspension, he said, consisted in the use of silk sutures. In the clinic he employed catgut exclusively. He believed that danger from premature absorption of catgut was less than that from the presence of a foreign body, such as silk in the abdominal cavity. He thought that the reason women formerly did not appear to have procidentia was that they did not then consult physicians for this trouble, and that if they had they would not have obtained relief. He took exception to the attitude of both speakers in regard to ventral fixation, which he believed to be the operation par excellence in women beyond the climacteric, although he considered it criminal to do this operation on a woman during the childbearing period. The suspension that takes in one or two strands of the muscle he thought more effective than the ordinary suspension in which merely the peritoneum was used. In a patient with large uterus and with lax vaginal and abdominal walls, better support was afforded by ventral fixation than by any of the other operations mentioned. The sixth operation described by him was not the Simpson operation, but a modification devised by Dr. Charles P. Noble, of Philadelphia, and was quite similar to the operation described by Dr. Ill. If the ligament were taken up and drawn through the abdominal cavity, the inlet to the pelvis woulid be divided into three distinct artificial compartments. Dr. Martindale said that this was not anatomic and was likely to produce strangulation of the bowel.

Other Papers.

The following papers were also read: "Diagnostic Importance of Vomiting in Children," Dr. Arthur Stern, Elizabeth; "Present Status of the Milk Question," Dr. Alexander McAlister, Camden; "Influence of Overweight and Underweight on Vitality," Dr. Brandreth Symonds, New York; "Report of a Case of Excision of the Stomach for Carcinoma." Dr. Edward Staehlin, Newark; "Review of Hernia as Understood and Treated at Different Epochs by Past and Present Masters of Surgery," Dr. Thomas Mackenzie, Trenton; "Clinical Features and Treatment of Acute Perforating Gastric Ulcer," Dr. Ellsworth Eliot. Jr., New York; "Reflex Gastric Symptoms as a Factor in Surgical Disease of the Abdomen," Dr. John P. Reilly, Elizabeth; "The Psychic Element in Medical Practice," Dr. L. Emerson. Chicago; "The Drink Habit and Its Treatment," Dr. Charles A. Rosenwasser, Newark.

WISCONSIN STATE MEDICAL SOCIETY.

Sixty-second Annual Meeting, held at Milwaukee, June 24-26, 1908.

(Continued from page 525.)

Open-Air Treatment of Pneumonia.

Dr. Arthur J. Patek, Milwaukee, stated that the open-air treatment of pneumonia was mentioned nearly 150 years ago; that it had been resurrected, and in 1904, W. P. Northrup presented his first account of the method he had been pursuing for eleven years in treating bronchopneumonia in children. Access of cold air to the body. well protected, is devoid of danger. Puerperal fever, surgical sepsis, typhoid fever, pneumonia, meningitis and other acute inflammatory conditions had been succesfully combated by the method. Even temperature, instead of being desirous, is a menace in the sick room, and fresh air currents and changing temperature are essential. People should cultivate fresh air for twenty-three out of twenty-four hours. Oxygen is inferior to fresh air in disease. The results of the latter day open-air treatment of pneumonia were apparently very favorable. The distress signals in pneumonia were due to the intensity of the pulmonary invasion or to failure of the heart, and these conditions were invariably relieved by the cold-weather treatment. He concluded that fresh air. unpolluted, unheated, cold if possible. was the purest stimulant and best prop to a sick, badly functionating lung.

DISCUSSION.

Dr. L. F. Jermain emphasized the importance of prevention in pneumonia, stating that while tuberculosis was decreasing, pneumonia was increasing. More attention should be paid to prophylaxis, and the care of the sputum in pneumonia was as important as in tuberculosis. He endorsed the open-air treatment. In the absence of a specific antitoxin serum, treatment must necessarily be eliminative and supportive.

Other Papers Read.

The following papers were also read: "Anaphylaxis," Dr. Karl Smith. Madison; "Ophthalmia Neonatorum," Dr. F. R. Boyce, Madison; "Modern Operation for the Cure of Inguinal Hernia," Dr. E. Wyllys Andrews, Chicago; "Chronic Auriculoventricular Heart Block in the Dog," Dr. Joseph Erlanger, Madison; "Present Status of Medical Expert Testimony on Insanity; a Plea for Corrective Legislation." Dr. F. C. Studley, Milwaukee; "The Medical. Ethical and Forensic Aspects of Criminal Abortion," Dr. Wilhelm Becker, Milwaukee; "Causes of Monsters," Dr. C. R. Bardeen, Madison; "Actinomycosis," Dr. Louis Falge, Manitowoc.

Proceedings of the House of Delegates.

REPORT OF THE EXECUTIVE COMMITTEE ON MEDICAL DEFENSE.

Dr. G. E. Seaman presented the report and a discussion followed on the general question of medical defense, especially as regards giving the committee discretionary power as to the subjects to be defended, and the solution of the problem was that all defensible cases would be defended. Objection was made that a man might get no defense. The reason given for not making the matter more definite was that if it were compulsory that all cases should be defended other than those of a criminal or immoral character, an innocent man might be accused of some offense of that character which would need defense to a greater degree than the ordinary malpractice case.

REPORT OF COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

Dr. A. W. Gray, chairman, presented his report. A discussion followed, and resolution was carried to assess the membership $2 next year, the assessment to be voluntary and not obligatory on the members, for the purpose of prosecuting the cases now pending in the courts against quack medical institutes. The facts were shown to be that the state through its district attorney, was unwilling, or unable to take charge of these cases. The Board of Medical Examiners had no money to take care of them. While it is the duty of the medical examiners of Wisconsin to prosecute these cases, it was agreed by all that it was a proper obligation for the members of the society to assume, and it was the opinion of the delegates that an effort should be made in all the societies to raise as much as possible for action in that direction.

THE REPORT OF THE COMMITTEE ON THE PREVENTION AND CURE OF TUBERCULOSIS.

Dr. M. P. Ravenel, Madison, presented this report, which was adopted. It stated that it seemed to be now universally admitted that the chief source of infection for mankind lay in the sputum of consumptives. The second source of infection was bovine tuberculosis. The report gave the most important measure of prevention as destruction of the sputum, burning being the best method, and when this was not available the use of strong germicides. The committee favored the extension of the tuberculin testing of cattle. It recommended careful training of children in well-ventilated rooms, proper hours of rest, exercise and use of plain but abundant food. The three agents of utmost value in the cure of tuberculosis are fresh air, good food and rest; the use of drugs should be limited; medication should be avoided so far as possible; early diagnosis should be made; the physician should be master of the situation and insist on rigid discipline and routine of life. As an aid to early diagnosis in doubtful cases, the report recommended the use of tuberculin, and stated that the hygienic laboratory at the University at Madison was at the service of physicians for advice and the examination of sputum, free of charge.

REPORT OF THE DELEGATE TO THE COUNCIL ON MEDICAL LEGISLATION OF THE AMERICAN MEDICAL ASSOCIATION.

Dr. Gilbert E. Seaman presented this report. The Council on Medical Legislation of the American Medical Association adopted the report of the Committee on Uniform Medical Legislation, declaring in favor of a standard and uniform bill regulating the practice of medicine and reciprocity in medical license, and also passed a resolution in favor of legislation providing for physical examination and re-examination of railroad employés having to do with the operation of trains on railroads doing an interstate commerce business, and a committee was appointed to draft a bill and present the same to Congress at the next session. The Committee on Uniform Vital Statistics of the National Council made an exhaustive report and presented a bill regulating the collection and preservation of vital statistics for adoption in the various states, which was approved. The report of the committee on Uniform Food and Drug Laws of the national council recommended the drafting of a standard law for all the states where such law does not exist, and the report was adopted. Dr. Seaman recommended hearty cooperation and support on the part of the Wisconsin State Medical Society.

NATIONAL DEPARTMENT OF HEALTH.

The secretary, Dr. Charles S. Sheldon, then read a communication from the Committee of One Hundred on National Health, asking for the support of the society in the effort to organize a board of national health or a department of national health; and also a communication from the Secretary of the American Medical Association with reference to the organization of branch societies. A motion was made that both matters be referred to a committee and suitable resolutions drawn up, which motion was unanimously carried. The resolutions, which were presented later, were as follows:

WHEREAS, We believe that the government should devote more attention to the application of hygiene to public health, and

WHEREAS, The Committee of One Hundred of the American Association for the Advancement of Science has taken active part in the movement looking toward the establishment of national control over all matters relating to public health; therefore be it

Resolved: That the Wisconsin State Medical Society heartily indorses this movement and desires to put itself on record to that effect.

CONTROL OF MIDWIVES.

DR. CHARLES S. SHELDON read a resolution drawn by a committee of the Milwaukee County Medical Society:

"*Resolved*, That the Committee on Public Policy and Legislation of this Society be and hereby are directed to use all possible efforts to secure the enactment of a law by the next legislature providing for the licensing and control of midwives by the State Board of Medical Examiners."

The resolution was unanimously adopted.

PREVENTION AND CURE OF TUBERCULOSIS.

A resolution from a committee from the second district on "Proposed Legislation for the Prevention and Cure of Tuberculosis, Looking to the Formation of a Bureau at Madison," was read by Secretary Sheldon, and after some discussion, was referred to the Committee on Public Policy and Legislation for consideration.

Election of Officers.

The following officers were elected: President, Dr. G. E. Seaman, Milwaukee; first vice-president, Dr. H. J. Stalker, Kenosha; second vice-president, Dr. J. M. Dodd, Ashland; third vice-president, Dr. H. B. Fears, Beaver Dam; delegates to the American Medical Association, Drs. Carl Doege, Marshfield, and C. A. Richards, Rhinelander.

A motion to refer the proposition of making the state assessment (exclusive of any county dues) $4 annually, was referred to the various county societies for a referendum vote.

Madison was chosen the next place of meeting.

Medicolegal

Proper Explanations Bearing on Physician's Bill.

The Supreme Court of New York, Appellate Division, Third Department, says that action in the case of Louis vs. Du Bois was brought by a physician to recover for services in attending Lucy Du Bois, a sister of the defendant. The plaintiff's evidence tended to show that he performed the services for the defendant on the latter's undertaking to pay therefor. The defendant's evidence, while practically admitting that the funds would in the end be furnished by him, contended that he was not primarily liable for the bill, and did not employ the plaintiff. The defendant put in evidence a bill rendered to him, the charge being made to Lucy Du Bois for professional services rendered her. This, unexplained, seemed somewhat antagonistic to the plaintiff's claim, and had a tendency to show that the employment was by Lucy Du Bois, or that the services were being rendered on her account. The plaintiff was asked, with reference to this bill, whether he ever had any conversation with Lucy Du Bois about it in any way for his services; whether there was ever any agreement or talk with the patient with reference to his being engaged to attend her or perform services for her; whether he ever charged, on his book or otherwise, the services to Lucy Du Bois; whether the bill was intended as a charge against Lucy Du Bois or was intended to indicate the party to whom the services had been actually delivered; and whether the defendant stated or indicated to plaintiff at any time that the patient was to pay or adjust the bill. These various questions were objected to and excluded, to which the plaintiff excepted. The plaintiff clearly had the right, by answering these questions, to rebut so far as his answers might any inference to be drawn from the manner in which the bill was made out.

Construction of Georgia Medical Practice Act as to Whom It Covers—About "Magic Healers" and Others—Physician Not Liable for Malicious Prosecution.

The Court of Appeals of Georgia says that the plaintiff in the case of Bennett vs. Ware was arrested on a warrant sworn out by the defendant charging the plaintiff with practicing medicine without a license, in violation of the statutes of that state. On a preliminary investigation the plaintiff was discharged, and thereupon he brought this suit against the defendant for malicious prosecution and false imprisonment. In his petition he alleged that at the time of his arrest and incarceration in the common jail he was engaged in the "profession of healing diseases without the use of medicine, commonly and better known as a 'magic healer'"; that he had healed the sick without the use of medicine in any form or manner whatever by placing his hands on that portion of the body which was affected by pain; that this gift or magic power was given him direct from the Lord; that he made no charge for his services, but accepted such compensation as the gratitude of his patients induced them to offer voluntarily; that, as a result of his arrest and prosecution for practicing medicine without a license, he suffered great humiliation and mortification, lost two days' compensation in "gifts," amounting to $25 per day, was put to an expense of $15 in employing a lawyer to defend him against the untruthful accusation and, in fact, "lost almost his entire practice"; that his prosecution was malicious and without probable cause; and that he had been damaged in the sum of $5,000. A demurrer was filed to this petition on the ground that the allegations showed that the plaintiff was in fact practicing medicine and suggesting remedies for the sick and afflicted, and receiving compensation therefor, without complying with the statutes of the state regulating the practice of medicine, and therefore that there was probable cause for his arrest and prosecution. The demurrer was sustained.

The direct question for determination was whether the plaintiff, under the facts set out in his petition, was engaged in the practice of medicine as defined by the statutes of Georgia. By virtue of its police power, the state has enacted legislation to protect the public against unfit and incompetent practitioners of medicine, and to prevent the results of malpractice.

In construing these statutes it is apparent that the law of this state recognizes only three systems or schools of medicine—the "regular," the homeopathic and the eclectic schools. It is impossible for one who desires to practice any other system to do so in this state as a practitioner of medicine, because under the law he can not procure a license. In other words, the law only proposes to grant a license to practice medicine to the allopath, the homeopath or the eclectic. It is true the statute provides that, "if the applicant desires to practice a system not represented by any of the" three boards, "he may elect for himself the board before which he will appear for examination"; but this is a barren privilege, for none of the three boards can or will examine any applicant except one who has a diploma from a regular medical college, or who proposes to practice one of the three systems. It would be absurd to say that one who practiced the healing art by magnetism, Eddyism, spiritualism, hypnotism, mesmerism or any other form for the treatment of disease based on a supernatural agency would be entitled to be examined by any one of the medical boards of the state; for the science of medicine is based on natural agencies. The court, therefore, concludes that only those who propose to practice medicine by one of the schools or systems recognized by the statutes of the state are required to have a license.

It was said that section 1478 of the Political Code of Georgia of 1895 undertook to define the practice of medicine, and that this definition embraced the particular practice of the plaintiff. According to his statement, his method consisted simply in laying his hands on the sick at the point or place of pain or disease, and the healing which followed was by a direct divine agency. Do the words in the statutory definition "or other agency, whether material or not material, for the cure, relief or palliation of any ailment or disease of the mind or body" embrace an agency of this character? It may be conceded that the words "material or not material" are sufficiently broad to include at least every human or natural agency. But the court can not believe that the legislature intended to include in the practice of medicine what may be called psychotherapeutics, or any form of the treatment of the sick which makes faith the curative agency. The words "other agency," "material or not material," *should be construed in obedience* to the maxim, "*Noscitur a sociis*" (it is known from its associates), and the meaning of the word "agency" must be limited by the associated words "drug, medicine, appliance, apparatus." In other words, the word "agency," even as qualified by the words "material or not material," was intended by the legislature to mean a substance of the general character of a drug or medicine, or surgical apparatus or appliance, the obvious purpose being to protect society against the evils which might result from the use of drugs and medicines by the ignorant and unskilful.

The purpose of the act is clearly indicated by its title, "to regulate the practice of medicine." It was not intended to regulate the practice of mental therapeutics, or to embrace psychic phenomena. These matters lie within the domain of the supernatural. Practical legislation has nothing to do with them. If they are a part of a man's faith, the right to their enjoyment can not be abridged or taken away by legislation.

However the so-called wisdom of this world may regard these things, it can not be denied that long before the Savior told His disciples that in His name they should heal the sick and prevent all manner of diseases by the laying on of hands, the practice of healing by means of prayers, ceremonies, laying on of hands, incantations, hypnotism, and other forms of psychotherapeutics existed. To the iconoclast who denounces these things as the figments of superstition, or to the orthodox physician who claims for his system all wisdom in the treatment of human malady, the court commends the injunction of Him who was called "the Good Physician," when told that others than His followers were casting out devils and curing diseases: "Forbid them not.' What matters the system, if, in fact, devils are cast out, and diseases are healed?

The court deduces: That the practice of medicine, defined by the code, is limited to prescribing or administering some drug or medicinal substance, or to those means and methods of treatment for prevention of disease taught in medical colleges and practiced by *medical practitioners; that* the purpose of the act regulating the practice of medicine was to protect the public against ignorance and incompetency by forbidding those who were *not educated and instructed as to* the nature and effect of drugs and medicine, and for what diseases they could be administered, from treating the sick by such remedial agencies; that the law is not intended to apply to those who do not practice medicine, but who believe, with Dr. Holmes, that "it would be good for mankind, but bad for the fishes, if all the medicines were cast into the sea," nor to those who treat the sick by prayer or psychic suggestion.

The court is clear that the plaintiff was not a practitioner of medicine in the sense of the statute or in the popular sense; and the fact that he received fees and compensation for treatment in the shape of gifts could not make what would otherwise not be the practice of medicine a violation of the statute regulating such practice, for it must be apparent that, if the mere laying on of hands amounts to the practice of medicine in any sense, it is so without reference to fee or reward.

But while the court holds that, under the allegations of the petition, the plaintiff was not engaged in the practice of medicine, and therefore was not violating the law regulating such practice in this state, it does not think that he was entitled to recover damages for malicious prosecution from the defendant physician who swore out the warrant against him. The question of law involved was sufficiently in doubt, in its application to his practice, fully to warrant a legal investigation of the question; and, in taking out the warrant, the defendant was fully justified by the existence of the probable cause; his act was without malice, and in behalf of the public. Besides, the court thinks that the practice of the plaintiff, while not in violation of the statute regulating the practice of medicine, was presumptively an imposition on the credulity of the public, which might in its consequences result in much injury, and that he was exercising a pretended power of magnetic healing to the deception of the people, and was obtaining their money in the shape of gifts under false pretenses, and the court does not think that the law should permit him to recover damages *resulting from a legitimate effort on the part of a citizen* to test the legality of his practice. The court therefore affirms the judgment of the court below in sustaining the demurrer and dismissing the plaintiff's petition.

Death After Fall Against Timbers and What Constitutes "Infection."

The Supreme Court of Kansas says that the injury to the insured in Continental Casualty Company vs. Colvin was received on January 9 from a fall which precipitated him against the edge of timbers, whereby he was bruised on the left side of his chest with sufficient force to cause external soreness and discoloration of the skin. He did not regard the injury as serious when it was received, although quite painful, and, except for a loss of six days, he continued at work with the occasional assistance of his fellow-servants, up to January 29. January 31 he called a physician, who pronounced the ailment to be pneumonia, or pleurisy, and gave treatment therefor. On February 14, there being no improvement, another physician was called, who, on examination and consultation with the first physician, decided that the former diagnosis was incorrect. The insured was then removed to a hospital, where, on February 16, an operation was performed by which it was ascertained that the chest cavity contained a large accumulation of pus. This was liberated and the cavity drained. The patient was very much exhausted, however, and on March 7 he died. The court affirms a judgment in favor of the beneficiary on an accident insurance policy which provided that the company should pay indemnity in the event that said insured should receive personal, bodily injury which was effected directly and independently of all other causes through external, violent and purely accidental means and which caused at once total and continuous inability to engage in any labor or occupation, which was followed by the further provision that if within ninety days from the date of the accident loss of life should result the company would pay the principal sum stipulated. The court holds that in an action by the beneficiary named in such a policy to recover the stipulated indemnity for the death of the insured, who died from an accidental injury, the condition that such death must have resulted "necessarily and solely" from such injury would be satisfied by showing that the injury was the predominating and efficient cause of the insured's death. The fact that other conditions were set in motion by the injury which may have contributed to such result was immaterial. The court also holds that the word "infection" as used in such a policy in providing for special indemnities "where the loss is occasioned or contributed to in any way by erysipelas, blood poisoning or infection." relates to external injuries, and does not include internal inflammations where pus is formed by the presence of pus germs.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal.

August 6.

1 *Some Aspects of Gonorrhea. F. Forchheimer, Cincinnati.
2 Stenosis of the Pylorus in Infancy. A Surgical Emergency. Report of Four Patients Operated on with Recovery. End Results. C. L. Scudder, Boston.
3 The Tonsils and Their Relation to the General Health. C. P. Sylvester, Boston.
4 *The Demonstration of the Spirochæta Pallida by the Method of Dark Field Illumination. W. C. Quinby, Boston.

1. **Gonorrhea.**—Forchheimer discusses the history of our knowledge of gonorrhea and reproduces various statistical tables showing *the morbidity in various armies, the United* States Navy and in civil life in Germany, a comparative analysis of alcohol and gonorrheal morbidity in the United States Army, and finally on his own results in Cincinnati, of strict examination of patients as to gonorrheal history. He takes up the question of sterility in relation to gonorrhea, but follows a course different from that pursued by Erb *in his researches.* Forchheimer has taken three generations, the histories of which are all known to him, whom he has attended in all kinds of

illnesses, 42 couples or 82 persons in number. He recapitulates his results practically as follows:

1. The morbidity of gonorrhea is diminishing.
2. The American army and navy are exceptions to this rule.
3. The present mathematical methods of deducing incidence of gonorrhea in all men from morbidity lead to fallacious results.
4. Of all males, 54.1 per cent. have gonorrhea during their lifetime.
5. We have not sufficient knowledge of the facts to state how many women have had gonorrhea during their lifetime.
6. The small number of his cases of sterility does not justify any positive conclusion.
7. Prevention of conception is the cause of "one child sterility" in the majority of instances. . . . Whenever his figures have shown anything it is always that the propagandists have greatly overestimated the frequency, the complications, and the dangers of gonorrhea. This has been notably the case with specialists in genitourinary disease in the male and in the female. . . . That there is much damage done by gonorrhea is abundantly shown by all statistics; therefore, it is a righteous cause to fight for its reduction But no righteous cause is aided by such lurid statements as have been made in connection with gonorrhea.

4. **Demonstration of Spirochæta Pallida.**—Quinby describes the method of dark field illumination for the demonstration of *Spirochæta pallida*, and draws the following conclusions:

1. It should be a routine practice to examine all suspicious lesions for the *Spirochæta pallida*.
2. The organism has a definite morphology and can be differentiated from other spirochetes by careful microscopic examination.
3. This is best done by the method of dark field illumination, with or without subsequent examination of a stained specimen.
4. Since the organisms are not always numerous on the surface of the lesion, the method of obtaining them is of importance. A most satisfactory way is that of suction, as described above, and the case should not be pronounced negative until some such method has been used

Medical Record, New York.

August 8.

5 *Darwinism and Diabetes. R. G. Eccles, Brooklyn, N. Y.
6 Symptomatology of Recurrent and Abductor Paralysis of the Larynx. C. C. Rice, New York.
7 Mechanical Vibration in the Treatment of Constipation and Pelvic Conditions M. L. A. Snow, New York.
8 Physiologic Action of the Mount Clemens Mineral Baths. R. Leuschner, Mount Clemens, Mich.
9 Use of Bacterial Vaccines. H. Britenstool, New York.

5. **Darwinism and Diabetes.**—Eccles continues his consideration of the nature of diabetes from a former article (*Medical Record*, May 9, 1908, abstracted in The Journal, May 23, p. 1753). He discusses the theory that heredity is a cause of diabetes, and argues that no tissue and no organ has ever been convicted of spontaneously starting disease. True heredity is a heritage of health and health-protecting appliances only. The idea of heredity as transmitting disease or tendencies to particular disease is to reverse the law of natural selection. Heredity is through and through but one mass of accumulated fitnesses. Such apparent maladjustments as we discern are but relative weaknesses toward conditions over which natural selection has had insufficient play. In seeking for the etiology of diabetes there are many more things to explain than a supposed loss of glycolytic power, or the results of the impaired functioning of any single organ of the body. Any satisfactory theory of diabetes must give some sort of explanation of many facts: Why the apparent waste of sugar occurs; how transient glycosuria is related to diabetes mellitus in causation; why pancreatic and transient glycosuria can occur in nearly all vertebrates; why diabetes patients are most common among the rich proteid users; why injuries are the common precursors of diabetic attacks; why extirpation of the duodenum produces as severe a diabetes as ablation of the pancreas; why in cold-blooded animals there is no glycosuria in ablation of the pancreas if the liver is removed at the same time; why the protoplasm of the muscles is damaged in all severe cases of diabetes; why glycogen disappears from the liver and muscles; why the heart, leucocytes, renal epithelium, cerebrum, etc., accumulate unusual amounts of glycogen; why the kidneys have increased their impermeability toward sugar but have not done so toward any other substance; why the body converts other kinds of food into sugar when carbohydrates are withheld; why, in starvation, the body consumes its own tissues in order to supply sugar to the blood and keep up the glycosuria; why approaching coma can be arrested by feeding with carbohydrates; why serious cases can be mitigated by feeding the patients with oatmeal and potatoes; why diabetes can exist with the pancreas in a perfectly healthy condition; why antiseptics produce a transient arrest of the glycosuria.

The author then suggests that a microbic explanation of diabetes would be essentially a Darwinian one, and would explain more facts than any other. In brief, he suggests that diabetes is an infection of the blood with some very common microbe, e. g., the colon bacillus, which thrives on sugar for choice, but is capable of proteolytic action when sugar is no longer available. With a deficiency of sugar in the intestinal canal, the organism finds its way through the blood stream to the source of glycogen and there sets up an irritation to which the liver responds by giving all the sugar it can possibly supply. The muscles, too, constitute other centers of sugar supply. A chemotactic optimum having been arrived at, the bacterium drifts away from the source of sugar, landing in a condition of surfeit at the kidneys, unless engulfed by phagocytes on the way. Arrived in the kidneys, the cells there would have to be protected against them so that a further protective overflow of sugar into the urine would keep the organism surfeited until either killed or expelled from the body. Eccles concludes by referring to the new potato cure and the oatmeal cure, which, he says, have their basis in the slow hydrolyzing of the substances into sugar, thus keeping up a supply of that substance within the intestinal canal. This would have no effect on the number of parasites already in the blood, but would lessen the accessions to it; while phagocytosis and kidney activity would lessen the numbers in the circulation.

New York Medical Journal.

August 8.

10 *The Tonsil from an Evolutionary Point of View. J. Wright, New York.
11 *Confessions of a Yeoman Prostatectemist. J. R. Eastman, Indianapolis.
12 *Real Conservatism in the Treatment of a Prostatic. G. M. Muren, Brooklyn, N. Y.
13 Anterior Poliomyelitis. I. D. Steinhardt, New York.
14 Acute Anterior Poliomyelitis in the Adult. L. Archambault, Albany, N. Y.
15 Malaria in Greece. A. Rose, New York.
16 *Prostitution. J. L. Nascher, New York.
17 How Plague is Spreading in Venezuela and Trinidad. J. F. Donnelly, New York.

10. **The Tonsil.**—Wright discusses the tonsil from an evolutionary standpoint, and argues the possibility that the enlarged tonsil in children is a protective condition. He says: "From various clinical facts, to some of which I have alluded, it seems likely that it is the small sunken, ragged tonsil, and not the large tonsil, which lets through the dangerous germ. Whether it is a septic or a tuberculous germ, the lymph nodes below swell up as a result of a local or systemic reaction, which seems calculated to retard the passage of the germ to the vena cava. Increase in size of the cervical lymph nodes can hardly be accepted as evidence of an increase in the filtering efficiency of their lymphoid structure without ascribing as much or more to the lymphoid structure of the tonsil and its coverings. The surgeon knows how much the absorption of cocain is retarded on the inflamed surface. Swelling of the tonsil, then, appears to some extent as a closing of the gate in acute conditions. Chronic enlargement seems clinically a sequence, but may it not be regarded physiologically as a continuation of the reaction? Does it not seem, keeping in mind the blind sort of way protoplasm varies, that it is an awkward move to keep the gate partly closed? It is certainly awkward, for it deepens the pits and narrows the air and food way; but then, protoplasm has had no university education in physiology."

11. **Prostatectomy.**—Eastman discusses the various methods of the principal noted prostatectomists, and concludes that operative treatment has now reached the point at which we are justified in saying that all cases of prostatic hypertrophy should be treated by prostatectomy, partial or complete, as soon as the condition has begun to produce annoying symptoms. It is important that we should not wait until the last word has been said on technic before we unanimously and with emphasis plead for early operation in this as in other painful and fatal maladies. When the profession generally appreciates the importance of early prostatectomy, before serious complications have developed, then the prostatectomist of average skill, the yeoman, may be able to approach more nearly to the standards of the masters.

12. **Treatment of the Prostatic.**—Muren is in favor of the removal of the gland whenever the patient's condition justi-

fies the risk. While suitable cases for operation must be selected, too little consideration has hitherto been given to those unfortunates who can not be classed as select cases. In many of these the two-stage operation may be well borne—preliminary drainage of bladder, and later, after sufficient improvement, complete removal of the gland. Muren recently has drained suprapubically. It is more rapid, disturbs the patient less, and failing sufficient improvement, the suprapubic fistula may be made permanent. Local anesthesia is all that is needed. He discusses the operation and protests against the routine use of the cystoscope in enlarged prostate without adequate indication, as needlessly painful and distressing to the patient.

16. **Prostitution.**—Nascher comments on Knopf's paper in the *New York Medical Journal*, May 2, 1908, abstracted in The Journal, May 16, page 1649. He compares the responsible factors in this country and abroad, instancing in particular Edinburgh, London, Paris and Vienna. He does not consider insufficient wages a marked cause in this country, save among those brought up amid vicious surroundings. He holds the stage much responsible for prostitution, and particularly accuses the lowering of the moral tone by the use of alcohol. Bad housing he regards as really of less importance than the racial traits of the dwellers, and instances the ghetto, where the housing is bad, but sexual immorality is not common. He says: "There should be severe punishment, not a fine, but imprisonment, for the employer, foreman or superior who assails an employé's virtue, though it be with her consent. This is a potent factor in the etiology of prostitution among working girls." Nascher especially condemns the pander, whom, however, the law unfortunately can not reach.

The Lancet-Clinic, Cincinnati.

August 1.

18 *The Unreasonable Traditions of Medicine. B. Holmes, Chicago.
19 What Subjects Can Be Practically Included in a Year's Work in Chemistry, Physics and Biology? W. F. Mercer, Athens, Ohio.
20 *Baby Farms. L. M. Cusher, Cincinnati.

18. **Traditions of Medicine.**—Holmes refers to the difficulty of abolishing exploded traditions from the minds of many. He cites the doctrine of tuberculosis heredity, the "adenoid fad," the use of non-committal terms, e. g., synovitis, cystitis, etc., and urges a return to rational nomenclature that means something nosologically definite.

20. **Baby Farms.**—Cusher considers the abomination of baby farming, and while admitting that some institutions of the kind are necessary in large cities, urges their supervision by the board of health, the employment of trained nurses and reputable physicians, and compulsory registration with the consent of some incorporated charitable institution of the state. He reproduces the bill before the Ohio legislature.

The Medical Fortnightly, St. Louis.

July 25.

21 Acute and Chronic Rheumatism. R. W. Webster, Chicago.
22 Glimpses of Early St. Louis Medical History. John J. McDowell. W. B. Outten, St. Louis.
23 Laryngeal Stenosis Treated by Laryngoscopy. R. H. Johnston, Baltimore.
24 *Gastroptosis. J. M. Bell, St. Joseph, Mo.

24. **Gastroptosis.**—Bell says that during the lying-in period more attention should be paid to proper bandages for weakened recti muscles and a slower return to a full diet, while the stomach walls, as well as all intra-abdominal ligaments are weak. Rest cures that compel patients to lie in bed with forced feeding to deposit fat in the abdomen, cure gastroptosis, providing serious relaxation of the abdominal muscles is not present. He recommends meals small, frequent and dry, the less weight the better; hence soups, broths, etc., are interdicted, as they contain so little nourishment for their weight. Carbohydrate diet is preferable because of its shorter sojourn in the stomach. It begins to pass the pylorus in thirty minutes, and within an hour is gone, while proteids require from one and a half to three hours or even four. Next to diet and rest comes proper scientific massage of the abdominal muscles daily for at least two weeks, after that at greater intervals for a month or two longer. The effect of cold abdominal douches is perceptibly tonic. Electricity has a psychic, and perhaps some real influence. Lavage is not generally recommended, still he finds it of material assistance in establishing tone to the motor function—peristalsis. In acute cases the patients will recover in four or six weeks; in chronic ones longer. Such patients should be kept under observation for several months after all symptoms have disappeared, to guard against relapse.

Virginia Medical Semi-Monthly, Richmond.

July 24.

25 *Some Anomalies of the Stigmata of Degeneracy. M. R. Hughes, St. Louis, Mo.
26 Postoperative Ileus. I. S. Stone, Washington, D. C.
27 Personal Experiences and Observations on Hernia and Herniotomy. R. C. Bryan, Richmond, Va.
28 Scarlet Fever. Report of a Case Developing Acute Nephritis and Treated by Spartein Sulphate. W. A. Lewis, Enterprise, Ala.
29 Diagnosis and Treatment of Empyema. M. E. Nuckols, Richmond, Va.
30 Dysentery. W. F. Waugh, Chicago.
31 The Choice of an Anesthetic in Anal Surgery. J. M. Lynch, New York.
32 Principles of Surgery. S. McGuire, Richmond, Va.

25. This article was published in the *Medical Fortnightly* Nov. 11, 1907, and abstracted in The Journal, Dec. 14, 1907, p. 2037.

Surgery, Gynecology and Obstetrics, Chicago.

July.

33 Perineorrhaphy for Complete Lacerations. T. J. Watkins, Chicago.
34 Primary Carcinoma of the Appendix. Case Report. J. J. Coons, Columbus, Ohio.
35 *Transplantation of Ovaries. F. H. Martin, Chicago.
36 *American Gynecological Society, President's Address. J. M. Baldy, Philadelphia.
37 *Cesarean Section Versus Sections of the Pelvis in Dealing with Mechanical Obstructions to Childbirth. A. L. Smith, Montreal, Canada.
38 *Immediate vs. Delayed (Expectant) Operation in Case of Ectopic Gestation. E. H. Grandin, New York.
39 *Report of Fifty-two Pregnancies and Labors Following Ventrosuspension of the Uterus for Retrodisplacements. J. O. Polak, Brooklyn, N. Y.
40 *[illegible] ig Gynecology, with Demonstrations of [illegible] Charts as an Aid in this work. J. A. [illegible] Y.
41 *Ventrosuspension an Unsafe Operation for Posterior Displacement of the Uterus During Child-bearing Age. E. B. Cragin, New York.
42 Acute and Chronic Appendicitis. A. H. Barkley, Lexington, Ky.
43 *So-Called Phlebitis of the Left [illegible] itis Not Operated On, with Some [illegible] of the Etiology of Postoperative [illegible] Chicago.
44 The Factor of Mortality in the Operation of Hysterectomy. Report of 105 Cases. M. Willis, Richmond, Va.
45 *The Pathogenesis of Ganglia, with a description of the Structure and Development of Synovial Membrane. W. C. Clarke, New York.
46 *Immediate vs. Deferred Operation for Intra-abdominal Hemorrhage Due to Tubal Pregnancy. H. N. Vineberg, New York City.
47 *Deferred Operation for Intra-abdominal Hemorrhage Due to Tubal Pregnancy. F. F. Simpson, Pittsburg, Pa.

35. **Transplantation of Ovaries.**—Martin repeats the histories of his first two cases of heteroplastic ovarian grafting (published in the *Chicago Medical Recorder*, July, 1903, and abstracted in The Journal, Aug. 1, 1903, p. 337) and gives the subsequent histories of the patient. To these reports he adds a third case of heteroplastic grafting done in December, 1905, and reported on in May, 1906. He also reports five cases of homoplastic grafting, in which small portions of sound tissue from ovaries that had to be removed in their entirety were replanted in the patient.

In Cases 1 and 2 there was unquestionably a revivifying influence on the menstrual apparatus. This was shown by appearance of vaginal discharge at intervals of thirty days for a considerable period, the discharge of blood on several occasions, and in the prompt elimination in Case 1 of the nervous symptoms which are observed in a menopause. In Case 3 the patient unfortunately has neglected to report. Martin believes that more ideal results might be expected if the transplantation in these cases could have been done sooner after the primary removal of the ovaries, before all the effects of the ovarian secretion had been eliminated from the patient's tissues and thereby terminated the rhythm or habit of menstruation and thoroughly established the changes of the menopause. Four of the five patients of homotransplantation reported regular and apparently normal menstruation. The other patient did not report after the operation. He reviews illnesses, 42 couples or 82 persons in number. He recapitulates his results practically as follows:

1 The morbidity of gonorrhea is diminishing
2 The American army and navy are exceptions to this rule
3 The present mathematical methods of deducing incidence of gonorrhea in all men from morbidity lead to fallacious results
4 Of all males, 54 1 per cent have gonorrhea during their lifetime.
5 We have not sufficient knowledge of the facts to state how many women have had gonorrhea during their lifetime
6 The small number of his cases of sterility does not justify any positive conclusion
7 Prevention of conception is the cause of "one child sterility" in the majority of instances Whenever his figures have shown anything it is always that the propagandists have greatly overestimated the frequency, the complications, and the dangers of gonorrhea This has been notably the case with specialists in genitourinary disease in the male and in the female
That there is much damage done by gonorrhea is abundantly shown by all statistics, therefore it is a righteous cause to fight for its reduction But no righteous cause is aided by such lurid statements as have been made in connection with gonorrhea

4 **Demonstration of Spirochæta Pallida.**—Quinby describes the method of dark field illumination for the demonstration of *Spirochæta pallida*, and draws the following conclusions:

1 It should be a routine practice to examine all suspicious lesions for the *Spirochæta pallida*
2 The organism has a definite morphology and can be differentiated from other spirochetes by careful microscopic examination
3 This is best done by the method of dark field illumination, with or without subsequent examination of a stained specimen
4 Since the organisms are not always numerous on the surface of the lesion the method of obtaining them is of importance A most satisfactory way is that of suction, as described above, and the case should not be pronounced negative until some such method has been used

Medical Record, New York.

August 8

5 *Darwinism and Diabetes R G Eccles, Brooklyn, N Y
6 Symptomatology of Recurrent and Abductor Paralysis of the Larynx C C Rice New York
7 Mechanical Vibration in the Treatment of Constipation and Pelvic Conditions M L A Snow, New York
8 Physiologic Action of the Mount Clemens Mineral Baths R. Leuschner, Mount Clemens Mich
9 Use of Bacterial Vaccines H Biltenstool, New York

5 **Darwinism and Diabetes.**—Eccles continues his consideration of the nature of diabetes from a former article (*Medical Record*, May 9, 1908, abstracted in THE JOURNAL, May 23, p 1753). He discusses the theory that heredity is a cause of diabetes, and argues that no tissue and no organ has ever been convicted of spontaneously starting disease True heredity is a heritage of health and health protecting appliances only. The idea of heredity as transmitting disease or tendencies to particular disease is to reverse the law of natural selection Heredity is through and through but one mass of accumulated fitnesses Such apparent maladjustments as we discern are but relative weaknesses toward conditions over which natural selection has had insufficient play. In seeking for the etiology of diabetes there are many more things to explain than a supposed loss of glycolytic power, or the results of the impaired functioning of any single organ of the body. Any satisfactory theory of diabetes must give some sort of explanation of many facts· Why the apparent waste of sugar occurs; how transient glycosuria is related to diabetes mellitus in causation; why pancreatic and transient glycosuria can occur in nearly all vertebrates; why diabetes patients are most common among the rich proteid users; why injuries are the common precursors of diabetic attacks; why extirpation of the duodenum produces as severe a diabetes as ablation of the pancreas; why in cold blooded animals there is no glycosuria in ablation of the pancreas if the liver is removed at the same time; why the protoplasm of the muscles is damaged in all severe cases of diabetes; why glycogen disappears from the liver and muscles; why the heart, leucocytes, renal epithelium, cerebrum, etc, accumulate unusual amounts of glycogen; why the kidneys have increased their impermeability toward sugar but have not done so toward any other substance; why the body converts other kinds of food into sugar when carbohydrates are withheld; why, in starvation, the body consumes its own tissues in order to supply sugar to the blood and keep up the glycosuria; why approaching coma can be arrested by feeding with carbohydrates; why serious cases can be mitigated by feeding the patients with oatmeal and potatoes; why diabetes can exist with the pancreas in a perfectly healthy condition, why antiseptics produce a transient arrest of the glycosuria.

The author then suggests that a microbic explanation of diabetes would be essentially a Darwinian one, and would explain more facts than any other. In brief, he suggests that diabetes is an infection of the blood with some very common microbe, e. g., the colon bacillus, which thrives on sugar for choice, but is capable of proteolytic action when sugar is no longer available. With a deficiency of sugar in the intestinal canal, the organism finds its way through the blood stream to the source of glycogen and there sets up an irritation to which the liver responds by giving all the sugar it can possibly supply The muscles, too, constitute other centers of sugar supply. A chemotactic optimum having been arrived at, the bacterium drifts away from the source of sugar, landing in a condition of surfeit at the kidneys, unless engulfed by phagocytes on the way. Arrived in the kidneys, the cells there would have to be protected against them so that a further protective overflow of sugar into the urine would keep the organism surfeited until either killed or expelled from the body. Eccles concludes by referring to the new potato cure and the oatmeal cure, which, he says, have their basis in the slow hydrolyzing of the substances into sugar, thus keeping up a supply of that substance within the intestinal canal. This would have no effect on the number of parasites already in the blood, but would lessen the accessions to it; while phagocytosis and kidney activity would lessen the numbers in the circulation.

New York Medical Journal.

August 8

10 *The Tonsil from an Evolutionary Point of View. J. Wright, New York
11 *Confessions of a Yeoman Prostatectomist. J. R. Eastman, Indianapolis
12 *Real Conservatism in the Treatment of a Prostatic. G. M. Muren, Brooklyn, N Y
13 Anterior Poliomyelitis I D Steinhardt, New York
14 Acute Anterior Poliomyelitis in the Adult. L Archambault, Albany, N Y
15 Malaria in Greece A Rose New York
16 *Prostitution J L Nascher, New York
17 How Plague is Spreading in Venezuela and Trinidad J F. Donnelly, New York.

10 **The Tonsil.**—Wright discusses the tonsil from an evolutionary standpoint, and argues the possibility that the enlarged tonsil in children is a protective condition. He says: "From various clinical facts, to some of which I have alluded, it seems likely that it is the small sunken, ragged tonsil, and not the large tonsil, which lets through the dangerous germ Whether it is a septic or a tuberculous germ, the lymph nodes below swell up as a result of a local or systemic reaction, which seems calculated to retard the passage of the germ to the vena cava. Increase in size of the cervical lymph nodes can hardly be accepted as evidence of an increase in the filtering efficiency of their lymphoid structure without ascribing as much or more to the lymphoid structure of the tonsil and its coverings. The surgeon knows how much the absorption of cocain is retarded on the inflamed surface. Swelling of the tonsil, then, appears to some extent as a closing of the gate in acute conditions Chronic enlargement seems clinically a sequence, but may it not be regarded physiologically as a continuation of the reaction? Does it not seem, keeping in mind the blind sort of way protoplasm varies, that it is an awkward move to keep the gate partly closed? It is certainly awkward, for it deepens the pits and narrows the air and food way; but then, protoplasm has had no university education in physiology."

11. **Prostatectomy.**—Eastman discusses the various methods of the principal noted prostatectomists, and concludes that operative treatment has now reached the point at which we are justified in saying that all cases of prostatic hypertrophy should be treated by prostatectomy, partial or complete, as soon as the condition has begun to produce annoying symptoms It is important that we should not wait until the last word has been said on technic before we unanimously and with emphasis plead for early operation in this as in other painful and fatal maladies. When the profession generally appreciates the importance of early prostatectomy, before serious complications have developed, then the prostatectomist of average skill, the yeoman, may be able to approach more nearly to the standards of the masters.

12. **Treatment of the Prostatic.**—Muren is in favor of the removal of the gland whenever the patient's condition justi-

fies the risk. While suitable cases for operation must be selected, too little consideration has hitherto been given to those unfortunates who can not be classed as select cases In many of these the two-stage operation may be well borne—preliminary drainage of bladder, and later, after sufficient improvement, complete removal of the gland. Muren recently has drained suprapubically. It is more rapid, disturbs the patient less, and failing sufficient improvement, the suprapubic fistula may be made permanent. Local anesthesia is all that is needed. He discusses the operation and protests against the routine use of the cystoscope in enlarged prostate without adequate indication, as needlessly painful and distressing to the patient.

16. **Prostitution.**—Nascher comments on Knopf's paper in the *New York Medical Journal*, May 2, 1908, abstracted in The Journal, May 16, page 1649. He compares the responsible factors in this country and abroad, instancing in particular Edinburgh, London, Paris and Vienna. He does not consider insufficient wages a marked cause in this country, save among those brought up amid vicious surroundings. He holds the stage much responsible for prostitution, and particularly accuses the lowering of the moral tone by the use of alcohol Bad housing he regards as really of less importance than the racial traits of the dwellers, and instances the ghetto, where the housing is bad, but sexual immorality is not common He says: "There should be severe punishment, not a fine, but imprisonment, for the employer, foreman or superior who assails an employé's virtue, though it be with her consent This is a potent factor in the etiology of prostitution among working girls." Nascher especially condemns the pander, whom, however, the law unfortunately can not reach

The Lancet-Clinic, Cincinnati.

August 1.

18 *The Unreasonable Traditions of Medicine B Holmes, Chicago
19 What Subjects Can Be Practically Included in a Year's Work in Chemistry, Physics and Biology? W F Mercer, Athens, Ohio
20 *Baby Farms L M Cusher, Cincinnati

18. **Traditions of Medicine.**—Holmes refers to the difficulty of abolishing exploded traditions from the minds of many He cites the doctrine of tuberculosis heredity, the "adenoid fad." the use of non-committal terms, e g, synovitis, cystitis, etc, and urges a return to rational nomenclature that means something nosologically definite

20. **Baby Farms.**—Cusher considers the abomination of baby farming, and while admitting that some institutions of the kind are necessary in large cities, urges their supervision by the board of health, the employment of trained nurses and reputable physicians, and compulsory registration with the consent of some incorporated charitable institution of the state. He reproduces the bill before the Ohio legislature

The Medical Fortnightly, St. Louis.

July 25

21 Acute and Chronic Rheumatism R. W Webster, Chicago
22 Glimpses of Early St Louis Medical History. John T McDowell W B Outten St Louis
23 Laryngeal Stenosis Treated by Laryngoscopy R H Johnston, Baltimore
24 *Gastroptosis J M Bell, St Joseph, Mo

24. **Gastroptosis.**—Bell says that during the lying-in period more attention should be paid to proper bandages for weakened recti muscles and a slower return to a full diet, while the stomach walls, as well as all intra-abdominal ligaments are weak. Rest cures that compel patients to lie in bed with forced feeding to deposit fat in the abdomen, cure gastroptosis, providing serious relaxation of the abdominal muscles is not present. He recommends meals small, frequent and dry, the less weight the better; hence soups, broths, etc, are interdicted, as they contain so little nourishment for their weight Carbohydrate diet is preferable because of its shorter sojourn in the stomach. It begins to pass the pylorus in thirty minutes, and within an hour is gone, while proteids require from one and a half to three hours or even four. Next to diet and rest comes proper scientific massage of the abdominal muscles daily for at least two weeks, after that at greater intervals for a month or two longer. The effect of cold abdominal douches is perceptibly tonic Electricity has a psychic, and perhaps some real influence. Lavage is not generally recommended, still he finds it of material assistance in establishing tone to the motor function—peristalsis. In acute cases the patients will recover in four or six weeks; in chronic ones longer. Such patients should be kept under observation for several months after all symptoms have disappeared, to guard against relapse.

Virginia Medical Semi-Monthly, Richmond.

July 24

25 *Some Anomalies of the Stigmata of Degeneracy. M R Hughes, St Louis, Mo
26 Postoperative Ileus I S Stone, Washington, D C
27 Personal Experiences and Observations on Hernia and Herniotomy R C Bryan, Richmond, Va
28 Scarlet Fever Report of a Case Developing Acute Nephritis and Treated by Spartein Sulphate W. A. Lewis, Enterprise, Ala
29 Diagnosis and Treatment of Empyema M E Nuckols, Richmond, Va
30 Dysentery W F Waugh, Chicago
31 The Choice of an Anesthetic in Anal Surgery J M Lynch, New York
32 Principles of Surgery S McGuire, Richmond, Va

25 This article was published in the *Medical Fortnightly* Nov 11, 1907, and abstracted in The Journal, Dec. 14, 1907, p 2037.

Surgery, Gynecology and Obstetrics, Chicago.

July

33 Perineorrhaphy for Complete Lacerations T. J. Watkins, Chicago
34 Primary Carcinoma of the Appendix. Case Report J J Coons, Columbus, Ohio
35 *Transplantation of Ovaries F H. Martin, Chicago
36 *American Gynecological Society, President's Address J M Baldy Philadelphia
37 *Cesarean Section Versus Sections of the Pelvis in Dealing with Mechanical Obstructions to Childbirth A L Smith, Montreal, Canada
38 *Immediate vs Delayed (Expectant) Operation in Case of Ectopic Gestation E H Grandin, New York
39 *Report of Fifty-two Pregnancies and Labors Following Ventrosuspension of the Uterus for Retrodisplacements J. O Polak, Brooklyn, N Y
40 *Suggestions in Teaching Gynecology, with Demonstrations of Special (Mechanical) Charts as an Aid in this work J. A Sampson, Albany, N Y
41 *Ventrosuspension an Unsafe Operation for Posterior Displacement of the Uterus During Child-bearing Age E B Cragin, New York
42 Acute and Chronic Appendicitis A H Barkley, Lexington Ky
43 *So-Called Phlebitis of the Left Not Operated On, with Some the Etiology of Postoperative l cago
44 The Factor of Mortality in the Operation of Hysterectomy Report of 105 Cases M Willis, Richmond Va
45 *The Pathogenesis of Ganglia, with a description of the Structure and Development of Synovial Membrane W C Clarke New York
46 *Immediate vs Deferred Operation for Intra-abdominal Hemorrhage Due to Tubal Pregnancy H N Vineberg, New York City
47 *Deferred Operation for Intra-abdominal Hemorrhage Due to Tubal Pregnancy F F Simpson, Pittsburg, Pa.

35. **Transplantation of Ovaries.**—Martin repeats the histories of his first two cases of heteroplastic ovarian grafting (published in the *Chicago Medical Recorder*, July, 1903, and abstracted in The Journal, Aug. 1, 1903, p. 337) and gives the subsequent histories of the patient. To these reports he adds a third case of heteroplastic grafting done in December, 1905, and reported on in May, 1906. He also reports five cases of homoplastic grafting, in which small portions of sound tissue from ovaries that had to be removed in their entirety were replanted in the patient.

In Cases 1 and 2 there was unquestionably a revivifying influence on the menstrual apparatus. This was shown by appearance of vaginal discharge at intervals of thirty days for a considerable period, the discharge of blood on several occasions, and in the prompt elimination in Case 1 of the nervous symptoms which are observed in a menopause. In Case 3 the patient unfortunately has neglected to report. Martin believes that more ideal results might be expected if the transplantation in these cases could have been done sooner after the primary removal of the ovaries, before all the effects of the ovarian secretion had been eliminated from the patient's tissues and thereby terminated the rhythm or habit of menstruation and thoroughly established the changes of the menopause. Four of the five patients of homotransplantation reported regular and apparently normal menstruation The other patient did not report after the operation He review-the literature of *ovarian transplantation*, both in human beings and in animals, and from it, with his own personal experience, he draws the following conclusions:

1. The operation of homoplastic or heteroplastic transplantation of the ovaries in women, or in lower animals, is no more dangerous if accomplished aseptically than any other small plastic operation on the appendages (Morris, Dudley, Fish, Griegorieff, Frank Arendt, Ribbert, Rubenstein, Glass, Mauclaire, Amico Roxas, Monprofit, Foa, Knauer, Martin)

2. Homotransplantation of ovaries on women, or in lower animals, will prevent the atrophy of the genitalia which usually follows castration (Morris, Fish, Dudley, Griegorieff, Knauer, Lukaschewitsch, Foa, McCone, Mauclaire, Martin)

3 It is not yet satisfactorily demonstrated that heterotransplantation of the ovaries in a considerable number of cases will give permanent relief from the nervous symptoms produced by the menopause or prevent atrophy of the genitalia otherwise following castration (Basson, Martin)

4 Heterotransplantation of ovaries in women or in lower animals, may prevent the atrophy of the genitalia which usually follows castration (Glass, McCone, Mauclaire, Schultz)

5 Transplantation of ovaries from one species into another may result in preventing the ordinary changes in the genitalia resulting from castration (McCone Lukaschewitsch, Schultz)

6 Menstruation will continue in women and monkeys after homoplastic transplantation of ovaries (Morris, Glass, Dudley Frank, Mauclaire Hoiban Martin)

7 Conception has followed homotransplantation in animals (Griegorieff McCone, Amico Roxas Mauclaire, Magnus)

8 Conception has followed heterotransplantation in animals (*McCone, Mauclaire, Guthrie*)

9 Conception has followed homotransplantation of the ovaries in women (Morris, Frank)

10 Conception has been reported following heterotransplantation of the ovaries in women (Morris)

11 Heterotransplantation of the ovaries should be accomplished as soon after the primary operation in which the receptor's ovaries have been sacrificed as possible before the menopause has become established and the genitalia atrophied (Martin)

12 Transplanted ovaries in other localities than the normal will maintain their vitality, will functionate, and will prevent ordinary sequelæ of castration

36 and 38 Abstracted in THE JOURNAL, June 20, 1908 p 2100

37 Abstracted in THE JOURNAL, July 4, 1908 p 70

39 **Ventrosuspension and Pregnancy.** Polak enumerates the complications in pregnancy and labor that may follow ventrofixation, as they have been tabulated by Kelly, and says that his personal experience with pregnancy and labor following ventrosuspension enables him to deny that they hold true for that operation In the literature little distinction has been made between fixation and suspension operations Polak defends the operation of ventrosuspension on a basis of 687 suspensions done in the course of operations for almost all forms of tubo-ovarian and appendicular disease associated with retrodeviation of the uterus He modifies Kelly's technic by substituting No 1 ten day chromicized gut for the silk suspension suture, and by not going so low on the posterior wall of the uterus in transfixing that organ. An examination of his statistics shows that ventrosuspension has not complicated or influenced any of the pregnancies or labors in this series and he is convinced that a properly performed suspension leaves the uterus in as good a position and is as free from the possibility of relapse as any of the several procedures advocated for a permanent cure

40 and 41. Abstracted in THE JOURNAL, July 4. pp. 70 and 71.

43. **Phlebitis Following Unoperated Appendicitis.**—Buhlig reports a case of so called phlebitis of the left leg in a patient with appendicitis not operated on, beginning about the tenth day of the illness. The onset of the complication and its clinical features tally so exactly with those of many of the postoperative cases that, in Buhlig's opinion, they are of like nature. He then compares the possible factors present in this case with those suggested in the numerous theories that have been advanced in explanation of postoperative phlebitis All relating to the actual operation and preliminaries can, of course, be discarded; also numerous factors—heavy bandages, sigmoid pressure, tumor, etc.—producing local or general abdominal pressure Even the hot water bag was eschewed for fear of disturbing limiting adhesions. There had been no previous exhausting disease, no demonstrable feeble circulation and no anemia Buhlig further cites Welch's observation, in discussing venous thrombosis of the heart, that the small liability to thrombosis under the conditions of heart disease (in which slow, feeble and irregular venous current would be the paramount factor) is one of many evidences that mere slowing of the blood current is not an efficient cause. Ruling out any undetermined changes in the blood state with a subject still in a problematic stage, the chief factor remaining is *any infection which might produce changes* in the vessel. He considers infection the cause, and can not see how appendicectomies and hysterectomies can possibly be made strictly aseptic. The lymphatic route of infection is the one that appeals to the writer. Buhlig promises to show elsewhere that "many of the reported cases of postoperative phlebitis are really phlegmasia alba dolens, and are, therefore, lymphatic in origin." And of the infectious nature of true phlegmasia alba dolens, Buhlig says, there can certainly be no question.

45. **Pathogenesis of Ganglia.**—Clarke concludes his article practically as follows. In summing up the theories of the pathogenesis of ganglia, evolved from the various hypotheses considered in regard to the hernial theory, it would be presumptuous, in the face of Pick's observations, to assert that no such synovial protrusion has ever existed, causing a ganglion, but it must be added that the condition is exceedingly rare. As to the remaining theories he is positive that many ganglia are distended anatomic or adventitious bursæ, but the majority are connective tissue cysts, formed by degeneration, excited by unknown factors In other words, he is convinced that ganglia are very rarely, hernial protrusions of synovial *membranes, frequently distended anatomic or adventitious* bursæ, most frequently degeneration cysts

46 and 47 Abstracted in THE JOURNAL, June 20, 1908, p 2100

American Journal of Medical Sciences, Philadelphia.

July

48 *Congenital Pyloric Spasm and Congenital Hypertrophic Stenosis of the Pylorus in Infancy H Koplik, New York
49 *Therapeutics of Self Repair S J Meltzer, New York
50 **Safeguards of the Heart Beat* H. Sewall, Denver.
51 *Cardiac Arrhythmia G. W. Norris, Philadelphia
52 *Peculiarities of the Symptomatology of Rheumatism in Children C H Dunn Boston
53 Statistics of Seventy Cases of Gastroscopy. C. Jackson, Pittsburg Pa
54 *Myelogenous Leukemia and Its Treatment with X-Rays H Harris San Francisco
55 Pyelonephritis Complicating the Puerperium. C. G. Cumston, Boston
56 Anatomy and Pathology of the Carotid Glands. L P. Gomez, Chicago
57 Congenital Unilateral Absence of the Urogenital System and Its Relation to the Development of the Wolffian and Muellerian Ducts H E Radasch, Philadelphia

48 **Congenital Pyloric Spasm.**—Koplik writes his paper to show that this is a disease which is rather vacillating at times in its symptomatology; that the men who insist that the patients recover spontaneously are correct when their material is analyzed, and that those who insist on operative procedures in certain cases might be correct if their material were analyzed in a like manner. Both parties are possibly correct, but they have both been looking at opposite sides of the shield. With this end he publishes and critically analyzes cases of his own, and takes up the question whether in these cases there is a spasm, or a distinct stricture of the pylorus, or stenosis. He believes that there is a certain set of cases in which at a certain period of the illness there occurs a spasm of the pylorus and stomach, which later subsides and the children recover. In other cases to this pyloric spasm is added a distinct anatomic condition in which the structure of the pylorus is abnormal, causing a distinct stricture, which in many cases, however, is susceptible of improvement, while in a third set the spasm of the pylorus may subside, the lumen remaining narrow, yet the children may improve with correct diet. In this way only can he reconcile the conflicting theories found in the literature viz.: that of Thompson, who insists that a muscular hypertrophy is superinduced by disordered coordination and contracture of the muscular coats of the stomach, due to swallowing some irritating substance—e. g., liquor amnii—at birth so that a functional hypertrophy due to overwork of the stomach develops; second, that of Pfaundler, who insists that all these cases are spasm cases and that the so called new tissues of the hypertrophied pylorus are the result of postmortem or postoperative contraction; third, that some of the individuals are born with a congenital anomaly at the pyloric end, consisting of a form of hypertrophy or new growth Koplik endeavors to show that all these theories are in a sense possibly true of many of the cases published. He reports cases of his own in three groups tending to confirm each of the three propositions He discusses the diagnosis, prognosis and treatment *of the condition*.

49. Abstracted in THE JOURNAL, June 13, 1908, p. 2019.

50. **Safeguards of the Heart Beat.**—Sewall's considerations tend to strengthen the conception that regurgitation from the auricles, thus preventing overstrain, is an occurrence so frequent that it can not be regarded as a pathologic event. Also, the indications are unmistakable that regurgitation from one or both ventricles, not caused by excessive dilatation of the auriculoventricular rings, but due to valvular insufficiency produced in another way, is an early and habitual sign of heart weakness. The therapeutic importance of the recognition of such signs of enfeeblement, he says, hardly needs an advocate.

51. **Cardiac Arrhythmia.**—Norris discusses juvenile arrhythmia, extrasystole, perpetual arrhythmia, heart block, and depression of contractility—pulsus alternans—and draws the following conclusions as to the prognostic importance of arrhythmia: Arrhythmia of muscular origin is more serious than that due to nervous causes. We can determine the presence of the latter by deep breathing and by the effect of the atropin test. Further, the time and cause of an arrhythmia will much modify our opinion of its seriousness. The respiratory type of irregularity is generally of trivial consequence. Extrasystoles, although often insignificant, require careful investigation, especially if they occur in middle aged or elderly people. Perpetual arrhythmia is always serious, and the same may be said of that rare condition, pulsus alternans. Auriculoventricular heart block also is unfavorable, for, although in some individuals the attacks may be precipitated by the injudicious administration of digitalis and disappear after withdrawal of the drug, and others may live for a number of years despite its presence, the symptom always indicates a disturbance of muscular functioning.

52. **Rheumatism in Children.**—Dunn bases the following division on the character of the onset and the severity of the case.

1 The mild arthritic type These are cases with slight and brief fever and joint symptoms only, of a mild and brief, even fleeting character, confined to one or few joints 2 The severe arthritic type, occurring in older children, with a severe polyarthritis resembling the adult type 3 Latent type In these cases there is at the onset a period with fever as the only symptom. Later may occur cardiac or arthritic symptoms, which may be so mild as to escape notice, or which may at any time become severe 4 Mild primary endocarditis These cases are characterized by fever and slight dyspnea, palpitation or precordial pain the symptoms being of brief duration Slight joint symptoms may develop in the course of the disease 5 Severe primary endocarditis These cases are characterized by fever and the whole train of the symptoms of cardiac incompetency They usually run a prolonged and obstinate course, recovery occurring very gradually At times death occurs from failure of the heart 6 Mild pericarditis In these cases precordial pain is the most prominent symptom accompanied by fever and the other signs of cardiac weakness They usually run a fairly long course Effusion may or may not occur, and—a notable point—it may occur without increase in the severity of the cardiac symptoms Cases of pericarditis almost invariably show endocardial murmurs also 7. Severe pericarditis In this type the fever is high, long continued, and obstinate, and precordial pain is severe at the onset Effusion always occurs The symptoms of cardiac insufficiency become very marked and their severity usually shows little relation to the amount of effusion although at times a sudden increase in their severity occurs in parallel with a sudden increase in the extent of the effusion Recovery is slow, and death, when it occurs, is due to cardiac weakness

54 **Myelogenous Leukemia.**—Harris discusses 4 cases of myelogenous leukemia observed at the Cooper Medical Clinic and one seen in private practice, and draws from them the following conclusions: 1. At present it is best to consider myelogenous leukemia a malignant neoplastic disease 2. The x rays are effective in treatment as a palliative measure 3 The action of the x rays is associated with the production in the patient of a leukolytic body or bodies.

Interstate Medical Journal, St. Louis.

July

58 *Unilateral Dislocation of the Cervical Vertebræ M B Clopton, St Louis
59 *Serum Disease as a Clinical Manifestation of Anaphylaxis E W Saunders, St Louis
60 Arthritis Deformans in Children I A Abt, Chicago
61 *Differential Diagnosis Between Complete and Incomplete Uretero Vaginal Fistula E Jonas, St Louis
62 Puerperal Fever E Runge, Berlin, Germany
63 Bichat: His Life, Researches and Character A Ebeleshymer St Louis

58 **Dislocation of Cervical Vertebræ.**—Clopton discusses the frequence, pathology, symptoms, diagnosis, etiology and treatment of dislocation of cervical vertebræ by means of a critical summary of the literature under each head, and describes the following method of treatment elaborated by Walton from similar plans proposed by Richet and Hurter: The anesthetized patient sits in a chair. The operator stands behind and using both hands grasps the head, which is rocked without traction, for traction only lessens the effectiveness of the fulcrum on the sound side. Slight rotation to carry the dislocated process forward to free it is first practiced. The head and neck are then tilted to the sound side and backward (that is, if the patient with a left dislocation is facing north the head is tilted southeast). This makes the dislocated articular facet rise above the facet below. The last motion is the rotation of the column backward into place, and the reduction is complete The method is styled "retrolateral flexion with rotation." He reports a case successfully treated by this method

59. **Serum Disease.**—Saunders deduces the following rules for his consideration of serum disease as a clinical manifestation of anaphylaxis: Curative sera are not the harmless substances we originally supposed. Immunizing injections of serum should not be employed when isolation will prevent the disease with a reasonable degree of certainty and the children can be watched. Serum should not be used in asthmatics, or those suffering from Graves' disease or the lymphatic constitution, except in developed diphtheria. The use of bactericidal sera of doubtful value should not be encouraged, without careful consideration of all the possible bad effects from anaphylaxis. If a second dose of serum must be given during the few weeks following a primary injection, small repeated doses are preferable to a large single dose. On the other hand, one large initial dose is probably less harmful and far more effective than several small doses given over several days.

61. **Ureterovaginal Fistula.**—Jonas summarizes the deductions from his paper as follows: 1. Leergehen (empty contraction) of the ureter is an important point for differential diagnosis between a lateral opening and complete interruption of the continuity of the ureter in ureterovaginal fistula. 2. Operative interference in ureterovaginal fistula, when there is only a lateral opening in the ureteral wall, is not advisable until there has been a chance for spontaneous healing.

Illinois Medical Journal, Springfield.

July.

64 *The Medical Profession and the Public W. L Baum, Chicago
65 Self Administration of Drugs: Or Does It Pay to Have a Doctor? C L Mix, Chicago
66 *Importance of Early Diagnosis and Prompt Surgical Treatment of Injuries to Diaphragm J. Y. Brown, St. Louis.
67 *Treatment of Joint Tuberculosis E H Ochsner, Chicago
68 *Treatment of Tuberculous Sinuses, Fistulous Tracts and Abscess Cavities E G Beck, Chicago
69 Treatment of Gallstone Diseases T. C. Kennedy, Shelbyville, Ind
70 *Vertebral [illegible] Diagnosis of Bronchial Adenopathy.
71 *Skimmed [illegible] Food for Infants H W Cheney, Chicago
72 The Nostrum and Proprietary Medicine Problem from the Standpoint of a Country Doctor H. A Pattison, Benld, Ill

64 66 and 68 Abstracted in THE JOURNAL, June 13, 1908, pp 2016 and 2017

67 Abstracted in THE JOURNAL, June 27, 1908, p. 2152.

70 **Vertebral Auscultation.**—Gray describes the normal auscultatory phenomena of the postcervical and upper dorsal regions Not all normal individuals, however, present the same resonant characteristics; even as voices are different, so are the tracheal and bronchial notes as regards intensity. Departures from the normal are: (1) bronchophony, (2) whisper concomitant, (3) extension downward of tracheal resonance, (4) cessation of vocal resonance at the level of the sixth or seventh cervical vertebra, (5) distant tone at some point between the occiput and the fourth dorsal vertebra He discusses each of these departures, and says that as to the value of vertebral auscultation in adults more reliance will, of right, be placed on the usual methods of diagnosis, physical and laboratory. But in children, in whom the glands are so often primarily affected, it is obvious that any diagnostic which promises us the opportunity to discover deep seated adenopathy must be of prime importance. Long before the frank signs of open, or so called incipient, tuberculosis present themselves begins the period of latency, for which read tuberculous glands

71. **Skimmed Milk.**—Cheney draws the following conclusions in his paper and urges a trial of the principles involved, even though they seem at first sight contrary to experience: 1. The theory that the proteids of cow's milk cause the principal difficulty in its digestion by infants, in the light of recent research and clinical investigation, is untenable and should no longer be taught. 2. Skimmed milk is a valuable temporary food in digestive disturbances of infants, is nutritious and easily digested.

American Medicine, New York.

July.

73 Health Department Methods for Supervision of the Milk Supply. W. C. Woodward, Washington, D. C.
74 The Autointoxications. E. E. Smith, New York.
75 *Hypertonia Vasorum Cerebri. W. F. Dutton, Pittsburg, Pa.
76 The Submerged Tonsil with Special Reference to Cervical Adenitis and Systemic Infections. L. M. Hurd, New York.
77 Sunlight and Solar Therapy in Relation to Tuberculosis. S. A. Knopf, New York.
78 Case of Gangrene of the Fingers J. A. Cutter, New York, and H. G. McDonald, Hackensack, N. J.
79 Diagnosis of Tuberculosis by von Pirquet's Cutaneous Reaction. F L. Christian, Elmira, N. Y.
80. Recent Literature on Dermatology and Syphilis. F. C. Knowles, Philadelphia.

75. **Hypertonia Vasorum Cerebri.**—Dutton discusses the pathologic conditions ascribed to hypertension of the cerebral vessels, their etiology, pathology, symptoms, diagnosis, prognosis and treatment. The factors in essential hypertension are (a) arteriosclerosis, (b) renal disease, (c) angiosclerosis. He discusses these in detail. He illustrates his modification of the Riva Rocci instrument for estimating blood pressure of the cerebral vessels, and points out that the eye frequently presents the first proof of hypertension therein, so that the ophthalmoscope should be constantly in mind. The treatment consists of dieting, restriction of liquids, avoidance of tea, coffee, alcoholics and tobacco, enforcement of complete mental and physical rest, massage, tepid baths in a warm room, the Schott method, electricity and vibration. As regards drugs, Dutton begins with 2 grains (0.13 gm.) of calomel at bedtime, with a saline aperient before breakfast, repeated daily for a week; then he gives potassium iodid, 3 grains (0.20 gm.) three times a day and gradually increases the dose to physiologic effect, and then reduces it to 5 grains (0.32 gm.), with 3 drops of Fowler's solution, three times a day after meals. Potassium being irritant should not be too long continued. Other remedies are nitroglycerin, aconite in four-drop doses, sodium nitrate, the theobromin and caffein group of diuretics, digitalis, squills, potassium citrate, apocynum and jalap as indicated. Dutton advises all subjects of hypertonia to carry 3-drop perles of amyl nitrite.

Journal of Cutaneous Diseases, New York.

July.

81 *Dermolysis—An Undescribed Dissolution of the Skin C. J. White.
82 Ichthyosis or Acanthosis—Which? W. W. Roblee, Riverside, Cal.
83 Case of Acne Agminata. W. B. Trimble, New York.

81. **Dermolysis.**—White proposes this name for a condition of the skin found in a Russian baker, who during his apprenticeship had to sleep in a low-ceiled room on top of the heated brick and mortar oven. The process was limited to the elbows and the suprapatellar regions of the thighs. The lesions varied from 3 to 10 mm., were cherry colored, round and dome-shaped, firm, rather tense and freely movable in the skin. White discusses the possible diagnoses, but all were discarded after full discussion at the Boston Dermatological Society. A nodule was excised and examined by Mallory's hematoxylin-phosphotungstic acid method (8 sections), hematoxylin-eosin (32 sections), eosin-alkaline methylene blue (8 sections), and acid orcein (7 sections). Clinically were found pea-sized, dome-shaped, cherry-colored papules, which apparently evolved into hitherto undescribed, flattened, muddy-white lesions, isolated or grouped around a relatively depressed, bluish-red, velvety center. These features were of long standing, developed originally on non-exposed areas of a boy's skin and had remained unassociated with all subjective symptoms. Histologically there were noted conspicuous epidermal changes; endarteritis; perivascular, perifollicular, and periglandular lymphocytic infiltration; basophilic collagen; collastin; general diminution of collagen and elastin, and, lastly, gradual disappearance of all these structures focally. In conclusion, he says: As histologically in colloid degeneration and often in senile skin we find basophilic collagen, collastin and a relative persistence of the cellular elements, etiologically the result of long-continued exposure to the action of light, heat and possibly cold, so here we find the same chemical microscopic changes due perhaps to the subjection of the skin, during the boy's apprenticeship, to the extraordinary and intimate exposure to heat while sleeping night after night on a glowing oven, and, in later years, to the possible further action of heat plus light in the recurring blasts from the open doors of the hot baker's ovens. And, furthermore, as we note endarteritis in chronic *x*-ray dermatitis, so here we find a similar pathologic change in a skin exposed by habit to intense light and heat.

Maryland Medical Journal, Baltimore.

June.

84 Growth of Our Knowledge of Infectious Diseases. J. H. M. Knox, Baltimore.

July.

85 Social Prophylaxis. Results Accomplished—The Outlook for the Future. P. A. Morrow, New York.
86 Epithelial Tumors of the Skin and Exposed Mucous Membranes A McGlannan, Baltimore.
87 *Physicians and Public Affairs. C. O'Donovan, Baltimore.

87. Abstracted in THE JOURNAL, May 16, 1908, p. 1633.

Journal of the Arkansas Medical Society, Little Rock.

June 15.

88 *Some Fallacious Notions Concerning Medical Organization. C. C. Stephenson, Little Rock.
89 *Getting Practice. Henry Thibault, Little Rock.
90 *Public Health, Education and Legislation. J. P. Sheppard, Little Rock.
91 *Some Problems of Childhood. H. P. Routh, Hackett, Ark.
92 *Sexual Hygiene. C P. Meriwether, Little Rock.
93 *The Arkansas Surgeon. A. G. Dickson, Paragould.

88 to 93. Abstracted in THE JOURNAL, July 18, 1908, pp. 218-230.

The Journal of the Kansas Medical Society, Kansas City.

June.

94 *Kansas City Medical Society, Its Mission, Its Needs, and Its Purposes. J. E. Sawtell, Kansas City.
95 Colitis. Possible Anatomic Causes; Surgical Treatment; Report of Case H. L. Snyder, Winfield, Kan.
96 *The Physician's Relation to Mental Healing Systems and Methods. S. S. Hilscher, Iola, Kan.

94. Abstracted in THE JOURNAL, May 30, 1908, p. 1828.

96. Abstracted in THE JOURNAL, May 30, 1908, p. 1823.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London.

July 25.

1 The Psychology of Success. T. C. Shaw.
2 *Inborn Errors of Metabolism. A. E. Garrod.
3 *Importance and Significance of Chemical Examination of Gastric Contents After a Test Meal; with New Method for Estimating the Ferment Activity of the Gastric Contents. W. H. Willcox.
4 *Motor Functions of the Stomach (a) in Normal Cases, (b) after Gastroenterostomy, as Demonstrated by X-Rays. H. M. Gray.
5 Intermittent Claudication, or Intermittent Limping, and Obliterative Arteritis, with Illustrative Cases. B. Bramwell.
6 Successful Removal of a Stone Weighing Two Pounds. O. Richards.
7 Diagnosis of Diseases of the Stomach and Intestines by X-Rays. C. J. Morton.
8 Ascites and Tumors of the Ovary. E. Emrys-Roberts.
9 The Individual Plasma. R. Fick.
10 Latah and Crime. W. Fletcher.

2. **Metabolism.**—Garrod, in the fourth Croonian Lecture, concludes his consideration of cystinuria, with the statement that we are far from being in a position to formulate a satisfactory theory of it. Before this can be done it will be necessary to accumulate many more data, and, above all, quantitative data, by patient investigation of individual cases. Finally he takes up pentosuria, with regard to which he concludes that the racemic arabinose of pentose urines is derived from some substance formed within the organism, and that glucose is not this parent substance. Neuberg has suggested that d. galactose is the substance, but Garrod considers the subject

and holds that no conclusive evidence is forthcoming to support this view. In pentosuria, also, he holds that much further patient research is necessary before our knowledge of this remarkable anomaly can be placed on a satisfactory footing.

3. **Gastric Contents.**—Willcox deals with the importance and significance of results obtained by a method of chemical examination of the gastric contents after a test meal, and he describes in detail a new method of estimating the ferment activity of the gastric contents. The test meal Willcox prefers is a pint of very weak China tea with a little milk and sugar, and a round of thin buttered toast, the contents of the stomach being drawn off in from an hour to an hour and a half later. He discusses the general appearance of the contents and the result of analysis as regards total acidity, hydrochloric acid, organic acid, mucin, sulphocyanids and ferment activity. Regarding the last he gives a summary of the coagulated egg-albumin test, the carmin fibrin test, Leube's method and Metts' method, and then describes a new method not hitherto published. It is based on the fact that the amount of rennin present in the gastric contents is usually proportionate to that of the pepsin. Gradually increasing quantities of filtered gastric contents are run from a graduated pipette into narrow test tubes (⅜ inch in diameter, 5 in. long) containing 5 c.c. of fresh unboiled milk and heated in a water bath at 40 C. The minimum quantity of gastric contents to cause complete clotting, so that the contents of the test tube do not flow out on inversion, gives an accurate measure of the rennin activity. The author illustrates the method. The conditions in which he has used the investigation of the gastric contents in diagnosis are as follows: 1. Gastric ulcer and hyperchlorhydria; 2, gastric carcinoma; 3, mucous colitis; 4, stomach normal; 5, chronic gastritis; 6, gastric ulcer before and after gastroenterostomy, and in children; 7, congenital pyloric stenosis; 8, pyloric spasm (acid dyspepsia); 9, marasmus.

4. **Motor Functions of Stomach.**—This is a supplementary paper to Gray's paper in the *Lancet*, Feb. 22, 1908 (abstracted in The Journal, March 21, p. 996) for the purpose of illustrating the principles there laid down. He submits 14 radiographs demonstrating the points involved, and concludes: 1. The stomach is, naturally, not of the usually accepted shape. 2. It is an organ of two compartments, cardiac and pyloric, the division between these being a physiologic sphincter. 3. These two compartments act in great part independently. 4. During digestion the cardiac portion maintains to a great extent its saccular form, its distal part only being affected by visible peristalsis, while the pyloric portion is tubular and affected by strong peristaltic waves along its whole extent. 5. In order to maintain or to restore physiologic conditions so far as possible, the stoma in the operation of gastroenterostomy should be made in the pyloric tube. 6. He is inclined very strongly to doubt that food prefers to pass through the pylorus rather than through the lateral stoma some time after gastroenterostomy has been done in cases in which there is no actual obstruction of the pylorus.

British Medical Journal, London.

July 25.

11 *Coxa Valga. A. H. Tubby.
12 Removal of Lymph Glands. R. Parker.
13 *Action of Chloroform Administered by Different Channels D. N. Paton and Dorothy E. Lindsay.
14 Administration of Ether by the Open Method. G. H. Colt.
15 *Rectal Drainage in Pelvic Abscess Due to Appendicitis. B. Pollard.
16 *Method of Treating Fracture of the Femur in the Newly Born. J. Edmondson.
17 *Case of Aphasia During Whooping Cough. J. S. Sewell

11. **Coxa Valga.**—Tubby defines the various terms used in connection with this condition and gives diagrammatic illustrations. He then considers the condition in its congenital and acquired forms, with illustrative cases. He says that, arguing from the analogy of coxa vara, in which the deformity is readily remedied by the removal of a wedge of bone with its base outward in the subtrochanteric region, it ought to be the right thing in coxa valga to remove a wedge with its base inward. This, however, may be a troublesome proceeding, on account of the immediate proximity of the vessels, particularly the internal circumflex and superior perforating arteries. Galeazzi has obtained good results in his cases by performing a linear osteotomy well outside the joint and at the base of the neck. He is convinced that in all anomalies of direction of the neck the proper site of operation is here, and not in the subtrochanteric region. He has further pointed out that if the section is made at the spot indicated the pull of the great muscular masses, whose tendons are inserted into the great trochanter, is to drag the shaft of the femur upward and lessen the angle of inclination. Afterward he applies sufficient traction to the leg to prevent a great displacement of the fragments without limiting the gradual ascent of the trochanter. By means of *x*-ray photographs he follows, step by step, this upward movement of the trochanter and stops it at the proper moment by means of a firm plaster-of-Paris spica. According to his figures, his treatment is successful. He points out that Nathaniel Allison divided the bone just below the trochanter, and remedied the external rotation and abduction and caused the angle of inclination to be diminished. Tubby gives the preference to Galeazzi's method, provided that the ascent of the trochanter is carefully watched and arrested at the right moment.

13. **Chloroform Administration.**—Paton and Lindsay refer to late poisoning by chloroform and endeavor to throw light on the etiology of the condition by a study of the changes produced in the protein metabolism of the body, with special reference to any interference with hepatic metabolism. Such an interference is indicated by disturbances in the distribution of the waste nitrogen excreted in the urine, and chiefly by a decreased conversion of ammonia into urea; hence the proportions of these two constituents have been more especially studied, although in the later experiments the nitrogen in uric acid and in creatinin also has been determined, as well as the sulphur in the oxidized and in the non-oxidized condition. The authors detail the results of their experiments on dogs, with the administration of chloroform by inhalation, by the stomach and by the hypodermic route, and discuss its assimilation and elimination by the blood. The rarity of late chloroform poisoning, they say, seems to be due to its rapid elimination and the absence of fixation in liver tissue.

15. **Pelvic Abscess Due to Appendicitis.**—Pollard asserts that in dealing with a well-localized appendix abscess in any situation it is, in his opinion, unwise to do more than is absolutely necessary for the efficient evacuation and drainage of the abscess. In these cases the appendix should not be removed at the time the abscess is drained, for its complete removal involves the breaking down of limiting adhesions and the risk of peritoneal infection. Holding this view, he is very averse to removal of the appendix in the original operation for pelvic abscess when this is done through an abdominal incision, and so he is not deterred from using the rectal route on account of the impossibility of removing the appendix through it.

16. **Fracture of Femur in New-born Infants.**—Edmondson has had two such patients whom he treated successfully as follows: The thigh was flexed on the abdomen with the knee extended, the foot naturally coming to the opposite side of the body. The triangular interval between the front of the leg and the abdomen and thorax was firmly packed with lint folded into a suitable shape. A narrow binder was then passed round the child's body and round the back of the leg extending from a little above the knee to the ankle, leaving the seat of fracture and the foot uncovered. This was readjusted occasionally when required, and at the end of three weeks removed altogether; perfect union had occurred.

17. **Aphasia During Whooping Cough.**—Sewell reports the case of a boy, 6 years old, who was previously able to talk well, in whom complete aphasia occurred during an attack of whooping cough with bronchopneumonia and lasted five weeks. Then the child began to make inarticulate noises, and six months later the aphasia and the accompanying right-sided paresis had entirely disappeared.

Medical Press and Circular, London.

July 22.

18 *Intestinal Intoxications. W. L. Brown.
19 Diet in Infancy and Childhood. J. S. Wallace.
20 Administrative Control of Anthrax. F. W. Eurich.
21 *Case of Pneumonia Treated by Continuous Inhalation of Oxygen. G. Stoker.

18. **Intestinal Intoxications.**—Langdon Brown says that gastrointestinal intoxication may conceivably occur from: 1, inorganic poisons, e. g., lead; 2, organic poisons, e. g., cyanids; 3, intermediate products of digestion, e. g., peptones, purins; 4, products of putrefaction, e. g., indol; 5, products of abnormal pathogenic bacteria present in the intestine. The first two are irrelevant to his paper. He discusses the remaining three individually and at length, and draws the following conclusions:

1. There is no satisfactory proof of intoxication by the ordinary disintegration products of digestion.
2. Putrefactive processes mainly affect the aromatic, *i. e.*, benzin groups of the protein molecule; there is no evidence that these can lead to symptoms of intoxication. Occasionally the sulphur in the protein molecule appears to be able to cause chemical changes in the hemoglobin, with resulting cyanosis. But as sulphur must always be set free in the putrefactive changes ordinarily occurring, we shall probably find that here, too, some abnormal bacterial agent is at work.
3. Careful examination has failed to reveal the presence of ptomains as the cause of any of these chronic intoxications.
4. It is clear that it is often difficult, if not impossible, to draw a hard and fast line between an infection and an intoxication in these cases. Hamilton's researches provide us with an explanation. The microbe may sometimes be able to establish itself in the blood stream, thereby producing an infection, while sometimes it is rapidly destroyed by the blood, but has been able, nevertheless, to disseminate its soluble toxins in sufficient quantity to produce definite symptoms.

Brown believes that we shall ultimately be able to refer all the real intestinal intoxications to the presence of actively pathogenic bacteria among the ordinary saprophytes of the intestine. He summarizes the points of treatment in a case of proved intestinal intoxication as follows: 1. A simple diet in which milk (reinforced with lactic acid if desirable) plays a large part. 2. Ordinary regulation of the bowels, without any drastic purgation. 3. Use of naphthalen tetrachlorid as an intestinal antiseptic. 4. Attention to septic conditions of the mouth. 5. Identification of the microbe responsible and preparation of the appropriate vaccine.

21. **Oxygen in Pneumonia.**—Stoker discusses the inhalation of oxygen in pneumonia and insists that to obtain the best results from the continuous inhalation of oxygen in pneumonia, etc., it is necessary to begin as soon as the disease has declared itself. The inhalation should be continuous, night and day, and carried out according to the method described by him. It should be continued as long as any symptoms remain. It is useless and worse than useless to wait until the patient is cyanosed and moribund before administering oxygen. Though it may give some temporary relief, it is then too late to save life.

Clinical Journal, London.

July 22.

22 Case of Hemophilia. D'A. Power.
23 Acute Abdominal Lesions of Pelvic Origin. T. G. Stevens.
24 Enchondroma in the Tendon Sheath of the Finger. R. R. Walker.

Journal of Tropical Medicine and Hygiene, London.

July 15.

25 *Flies as Carriers of Contagion in Yaws. A. Robertson.
26 *Health in Tropical Countries. J. F. Toomer.
27 Climate and Diseases of Brazil. A. Peixoto

25. **Flies and Yaws.**—Robertson reports an experiment from which he concludes that the house fly can carry the virus of yaws on its limbs and inoculate it into any abraded surface in a non-immune, and that by washing the bodies of yaws patients twice daily with warm water and smearing the papules with mercurial ointment the fly can be prevented from carrying infection. Experience at the Jarawa Central Hospital, where not a single case has occurred for three years, although it is only 50 yards distant from the yaws compound, proves this.

26. **Health in Tropics.**—Toomer gives a series of simple health rules and quotes some of the sanitary regulations in the Canal Zone.

Annales de Dermatologie et de Syphiligraphie, Paris.

June, IX, No. 6, pp. 321-384.

28 Frequency of the Microsporum Caninum or Lanosum in Man and in the Dog. (Fréquence du microsporum caninum ou lanosum chez le chien et chez l'homme.) R. Sabouraud, A. Suis and F. Suffran.

Annales de Gynécologie et d'Obstétrique, Paris.

July, XXXV, pp. 386-448.

29 *Extrauterine Pregnancy with Healthy Child at Term. (Grossesse extra-utérine à terme.) Potocki.
30 *Pregnancy and Childbirth with Congenital Mitral Stenosis. (Grossesse et accouchement dans les rétrécissements congénitaux de la valvule mitrale.) Audebert and H. Dupont
31 Obliteration of the Tube after Resection. (Oblitération de la trompe après résection.) I. Ronsse.

29. **Tubal Pregnancy at Term.**—Potocki delivered a healthy child in an extrauterine pregnancy without much loss of blood by double clamping the utero-ovarian artery and the uterine artery at its termination in the cornu of the uterus. The child has developed normally and is now 3 years old. The false labor was characterized by intermittent pains coinciding with contractions of the uterus, which relaxed afterward as in normal labor. The large tumor, however, containing the fetus did not change its consistency, only the uterus in front of the tumor. It is evident that the uterus begins to contract when the ovum is ripe for expulsion, whether it is inside or outside the uterus. The fetal heart-sounds were inaudible, but active movements were evident. The cyst should always be opened at the farther end from the placenta, and this can be determined by the maternal souffle. The vessels of the placenta in tuboabdominal pregnancy at term receive blood only from the vessels of the tube. In more than a hundred cases of ectopic pregnancy he has never encountered a case in which the placenta was not located on the tube, and hemostasis by the technic described is bound to be successful.

30. **Pregnancy in Congenital Mitral Stenosis.**—Audebert and Dupont report the cases of 5 women who have passed through a total of 13 pregnancies, including 10 at term, and without mishap, notwithstanding congenital mitral stenosis. They review 10 other cases from the literature, with a total of 43 pregnancies, 38 at term. Only one of the 15 women died, and the fetal mortality was only 7.5 per cent. Their experiences demonstrate anew that congenital lesions of the mitral valve do not have the grave prognosis in respect to pregnancy which accompanies acquired mitral defects. They consent to the marriage of patients with congenital mitral stenosis, and advise the women to nurse their infants, believing that the valvular trouble is merely the result of arrested development, which age and the power of adaptation to function will finally compensate in most cases and sometimes entirely correct.

Annales de l'Institut Pasteur, Paris.

June, XXII, No. 6, pp. 465-560.

32 Anaphylaxis and Toxogenins. C. Richet.
33 Mechanism of Anaphylaxis in Respect to Horse Serum. Besredka.
34 Problem of Etiology of Cancer. Borrel.
35 Microscopic Diagnosis of Human Trypanosomiasis. G. Martin and Leboeuf.
36 Biology of Bacillus of Epizootic Abortion. (Bacille de Bang et sa biologie.) J. Nowak.

Annales de Médecine et Chirurgie Infantiles, Paris.

July 15, XII, No. 14, pp. 469-504.

37 Retention of Urine in Typhoid Fever in Children. E. Gaujoux and V. Ros.
38 Caustic Stenosis of Esophagus Cured by Esophagoscope Guisez.

Bulletin de l'Académie de Médecine, Paris.

July 7, LXXII, No. 27, pp. 1-47.

39 "Enamel Pearls." (Perles d'émail.) L. Malassez and Galippe.
40 *Causes of Decline of Mortality from Tuberculosis in Berlin, London, New York, Vienna and Paris in Last Twenty Years. Armaingaud.

July 15, No. 28, pp. 49-75.

41 Frequency of Tuberculosis in Employés of Sugar Refineries (Raffineurs et tuberculose.) S. Bernheim, Dieupart and Netter.
42 *Toxic Origin of Arteriosclerosis. (Causes, la nature et le traitement de l'artério-sclérose.) H. Huchard.

40. **Causes of Declining Tuberculosis Death Rate.**—Armaingaud's long statistical study concludes by ascribing to the progress of private and public hygiene the declining tuberculo-

sis mortality, but he adds that the reduction is much less in Paris than in the other cities investigated. The Academy adopted a resolution calling the attention of the authorities to this fact and urging them to send a commission to study conditions in other large cities and to suggest measures for improvement at Paris—the commission to include members of parliament and of the Academy, of the National Board of Public Health and of the permanent Antituberculosis Commission.

42. **Arteriosclerosis.**—Huchard deprecates the practice of defining a disease by the anatomic findings rather than by the clinical course. This applies especially to arteriosclerosis, the clinical course of which is dominated by toxic symptoms causing fluctuation in the arterial tension, whence the absolute necessity for treatment addressed to the kidneys and other means of getting rid of the toxins. He remarks that there are many contradictory statements in regard to this disease, but few contradictory facts: Scientific Truth is the daughter of Time, he quotes. In looking over 15,000 cases of arteriosclerosis in his practice, he has analyzed the data in 1,835 and found a history of gout in 323, of rheumatism in 332, of syphilis in 209, of abuse of tobacco in 181, of infectious diseases in 67, of diabetes in 48, of alcohol in 27, of malaria in 14, the menopause in 12, and moral and nervous causes in 19. In 555 cases he was unable to discover any special cause for toxic action. He remarks that the dyspnea with angina pectoris is due to the kidneys, the angina being the work of the coronaries, while the dyspnea comes from the kidneys, and can be promptly arrested by an exclusive milk diet.

Presse Médicale, Paris.

July 11, XVI, No. 56, pp. 441-448.

43 *Overdistention and Overwork of Stomach when Food is Eaten too Rapidly. (Surdistention et surtravail gastriques d'origine tachyphagique.) L. Jacquet and Debat.

July 15, No. 57, pp. 449-456.

44 *Thyroid Rheumatism. (Rhumatisme chronique, progressif et deformant, par insuffisance thyroidienne.) E. Sergent and P. Ménard.
45 Light-Colored Liver Cells. (Etat clair des cellules hépatiques.) L. Bernard and L. Laederich.

43. **The Evil Harvest of Tachyphagia.**—Jacquet and Debat say that the pathologic harvest from rapid eating is much larger than is generally realized. Every one has a vague idea that it is injurious to eat too rapidly, but tables and skiagrams are given here which show the direct evil results from it, and the indirect injury from sympathetic reflexes. Their skiagrams show that a meal eaten in forty-five minutes causes a natural distention of the stomach, but the organ rapidly recedes to its normal size. When a similar meal, with the same amount, weight and composition of the food, is eaten in from twelve to fifteen minutes, it causes greater distention, and this distention persists to some extent. It is still pronounced at the end of five hours. The stomach tries to make up for the lacking fine division of the food from inadequate mastication, and in order to do this the stomach functions are overexerted, the local temperature and the blood pressure rise, the entire functional strain on the organ being abnormally high. The stomach in trying to do the work that should have been done in the mouth does it very inefficiently and at tremendous sacrifice. Recent test-tube research confirms the assumption that fine division of the food is by far the most important factor in its digestion: the chemical composition, etc., being comparatively subordinate. This overexertion imposed on the stomach three times a day is the indirect cause, by reflex action, they say, of a notable part of the ills to which flesh is heir. They use the term "tachyphagia" and "bradyphagia" to designate habitual fast or slow eating. *The former is pathogenic in many hitherto unsuspected directions, and its suppression, they find, has a preventive and curative action in unsuspected ways.*

44. **Deforming Rheumatism from Thyroid Insufficiency.**—Sergent and Ménard describe a form of chronic, progressive and deforming rheumatism which seems to be the effect of defective or perverted functioning of the thyroid. It is evidently a primary affection, most frequent in women, especially in those who have had numerous pregnancies or dysmenorrhea. There is frequently a history of acute articular rheumatism. Vincent has lately pointed out the involvement of the thyroid during acute articular rheumatism, with tumefaction of one or both lobes and tenderness of the gland. He calls this the "thyroid sign," stating that it is the result of exaggerated functioning of the gland, and that it is observed, although to a less extent, in most infectious diseases. It is absent in the very mild and in the very severe cases. In acute articular rheumatism, when the thyroid sign is absent, the disease usually is extremely protracted. In this case thyroid treatment shortens the course of the disease. The thyroid sign is generally transient, but it may persist and increase and terminate in exophthalmic goiter. They have recently reported some cases of this sequence. A thyroid origin for deforming rheumatism is suggested by concomitant symptoms suggesting a tendency to myxedema, such as desquamation, hypertrophy of the nails, sclerodermia and psoriasis, edematous infiltration of the tissues, somnolency and headache, and exacerbation of these symptoms with the joint attacks. The most characteristic feature of the trouble is that it is benefited by thyroid treatment. Deforming rheumatism is generally rebellious to medication, and the improvement under thyroid treatment confirms the theory of thyroid origin. They advise a trial of thyroid treatment in every case of this disease, suspending it at the least symptom of intolerance, examining the urine every two or three weeks, and noting the quantity every day and the blood pressure and pulse every second day, and taking the weight every week. Thyroid treatment is contraindicated in active tuberculosis and in heart disease. If the pulse reaches 100, the blood pressure drops to 14, the amount of urine surpasses two liters, and the nitrogen proportion falls below 80 per cent., it is best to suspend the thyroid treatment for a few days. Iodin may also prove effectual. Among the cases reported is that of a woman of 28 given Roentgen treatment for excessive growth of hair on chin and neck. Under the influence of this treatment, chronic deforming rheumatism developed and signs of a tendency to myxedema. Suspension of the treatment and administration of thyroid extract restored conditions to normal. Rheumatism from thyroid insufficiency has a slow and progressive evolution, subject to remissions or even spontaneous retrogression. In one case all the symptoms vanished as exophthalmic goiter developed.

Semaine Médicale, Paris.

July 15, XXVIII, No. 29, pp. 337-348.

46 Anemia from Deficient Production of Blood. (Les anémies par anhématopoièse.) C. Aubertin.

July 22, No. 30, pp. 349-360.

47 The Lipoids in Hemolysis. L. Ambard.

Archiv für klinische Chirurgie, Berlin.

LXXXVI, No. 3, 575-857. Last indexed July 25, p. 355.

48 *Gastroduodenoscopy and Diaphanoscopy. T. Rovsing.
49 Hirsch Technic for Weight-bearing [illegible] tragfähiger Amputationsstümpfe du [illegible] nach H. Hirsch im Japanisch-russischen Kriege 1904/05.) V. Hashimoto and M. Saito.
50 *Pathogenesis of Cholelithiasis. A. Exner and H. Heyrovsky.
51 *Operation for Cleft Palate by Suturing over Plates. (Operation der Gaumenspalte mittelst Plattennaht.) A. Winternitz.
52 *Lightning Treatment of Cancer. (Blitzbehandlung der Krebse.) V. Czerny.
53 *Endemic Deforming Osteoarthritis in Eastern Siberia. E. Beck.
54 *Operative Treatment of Embolism of Pulmonary Artery. F. Trendelenburg.
55 *Stretching the Prostate. (Prostatadehnung.) C. Bayer.
56 *Ganglioneuroma. H. Braun.
57 Case of Aleukemic Lymphadenia of Endotheliomatous Nature. G. Parlavecchio.
58 *Permanent Cure of Mammary Cancer. (Dauerheilung des Brustkrebses.) Steinthal
59 *Injury of Nerves During Extirpation of Glands in the Neck. (Nervenläsionen bei Drüsenexstirpation am Halse.) M.
60 * [illegible] redé.
61 [illegible] and their Consequences. (Operative Behandlung der Knochenbrüche.) S. Peltesohn.

48. **Improved Direct Visual Inspection of the Stomach.**—Rovsing applies the gastroscope and diaphanoscopy when the stomach has been exposed by a laparotomy. He uses a gastroscope like a very large cystoscope, with a passage for blowing in air, of which he gives an illustration. He reviews the find-

ings in 24 cases, especially comparing the diagnosis before the operation, the diagnosis after external inspection and palpation of the stomach after it has been exposed, and, finally, the diagnosis after diaphanoscopy and again after the gastroscope has been introduced through a buttonhole into the stomach. The first stage in the investigation is the diaphanoscopy; the gastroscope is introduced through a buttonhole in the stomach wall, which is then sutured airtight around it, and the stomach is inflated with air blown in through the gastroscope. He describes and illustrates the characteristic findings, which are instructive. This procedure shows conditions much better than direct visual inspection. It reveals the source of a hemorrhage which otherwise might escape detection, as he shows by several examples. With care there is no danger of infection, he declares, while for differentiating purposes this technic is unsurpassed.

50. **Pathogeny of Cholelithiasis.**—Exner and Heyrovsky report research from Hochenegg's clinic which demonstrates that bacteria have a decomposing action on the bile salts with precipitation of cholesterin. This is the nucleus for the gallstone.

51. **Plates for Suture of Cleft Palate.**—Wintermitz gives an illustrated description of the method of closing cleft palate by taking the sutures over silver or aluminum oval plates, 1 cm. long by 4 mm. wide. As children are more inclined to catarrh in the winter, he always performs this palate operation in the summer, and has the teeth carefully attended to beforehand.

52. **Lightning Treatment of Cancer.**—Czerny's article was presented at the German Surgical Congress in April, and relates his experiences with the Keating-Hart method of fulguration or lightning treatment of cancer. He thinks it has opened a new field for treatment not only of cancer, but also of lupus, tuberculous ulcers and possibly also of goiter, enlarged prostate and hemorrhoids, besides nevi, etc. He regards it as a powerful, easily regulated means for destroying cancer tissue, able to cure in so far as the malignant disease is accessible to the knife, the curette and fulguration. Unfortunately, the destruction of the cancer cells is not so complete that it devitalizes them entirely. Mouse cancers, although apparently destroyed by the fulguration, yet retain their vitality enough for transplantation, unless the fulguration was carried to the point of complete desiccation—this shows the limits of the treatment.

53. **Endemic Deforming Osteoarthritis.**—Beck describes an affection of the bones and joints which he encountered in from 6 to 46 per cent. of the inhabitants of the villages in the Transbaikal district in Siberia. He found 1,009 persons in 11 villages, with a total population of 3,153. Children between 8 and 13 were principally affected, and he believes that the drinking water is responsible for the affection which is increasing in frequency.

54. **Operative Treatment of Embolism of the Pulmonary Artery.**—Trendelenburg describes his theoretical premises and his technic for the operation which he has successfully applied in the clinic.

55. **Stretching of the Prostate.**—Bayer has been applying to the prostate the principles of Récamier's method of stretching the sphincter in cases of painful spasmodic contraction. He describes a little instrument he has devised for the purpose, a curved metal catheter something like a lithotriptor, with the difference that the halves of the beak spread apart as the thumbscrews turn. The prostate bears this stretching without harm, and no anesthetic is required. In the four cases reported the ideal restoration of the bladder functioning shows that the dilatation of the contracted prostatic part had a large share in the success. He advises this dilatation after failure of other measures in chronic prostatitis and enlargement of the prostate, with retention and tenesmus without threatening complications. His method of sagittal dilatation cures the kinking of the posterior wall of the neck of the bladder.

56. **Ganglioneuroma.**—Braun reviews the literature on the subject of these tumors—a total of 26 cases—and reports a case from his own experience, with successful extirpation. He thinks that it is the first case on record in which the abdominal aorta was successfully sutured with a circular suture.

58. **Permanent Cure of Mammary Cancer.**—Steinthal states that 44 patients have been permanently cured out of 142 on whom he operated for mammary cancer from 16 to 3 years ago. He tabulates this material under various headings. The size of the tumor does not affect the outcome decisively, but he mentions that in none of the permanently cured patients had the tumor grown to the skin and tissues below. A family tendency was apparently evident, and in these cases the cancer seemed to be especially malignant. Good results can be counted on only in those cases with slow growth in which the tumor is no larger than a plum, and is still confined to the gland.

59. See abstract in The Journal, April 18, 1908, page 1315.

60. **Cauterizing Gastroenterostomy.**—Credé gives an illustrated description of a method of gastroenterostomy which he has applied in 8 cases. He believes its simplicity and harmlessness commend it, especially in cases of incipient carcinoma of the pylorus. Just before tying the suture, the actual cautery is applied to the stomach wall, cauterizing through to the mucosa without opening the latter. The intestine is treated in the same way, and the two defects thus made are coaptated. The great advantage of this method is that neither the stomach nor the intestine is actually opened. The suture is simple and stout, and the seared tissues grow together firmly over a comparatively large area. He claims also that the technic is simple and requires less time than others, while it excludes all danger of the vicious circle, etc.

Berliner klinische Wochenschrift.

July 20, XLV, No. 29, pp. 1345-1388.

62 Postscarlatinal Gangrene of the Skin. (Hautgangrän bei Scharlachrheumatoid.) Heubner.
63 Antitryptic Power of Human Blood Serum, Especially in Cancer Patients. (Antitryptische Kraft des menschlichen Blutserums.) L. Brieger and J. Trebing.
64 Diagnostic Puncture of Brain. (Hirnpunktion.) F. Krause.
65 *Scopolamin-Morphin Anesthesia. (Morphium-Scopolamin-Narkose.) B. Korff.
66 Roentgen Treatment of Oily Seborrhea. H. E. Schmidt.
67 Discovery of Typhoid Bacilli in Cerebrospinal Fluid in Typhoid. (Auffindung der Eberth-Gaffky'schen Bacillen in der Cerebrospinalflüssigkeit bei Typhus abdominalis.) L. Silberberg.
68 Preventive Medicine on an Extensive Scale. (Seuchen und Rettungswesen.) S. Alexander.
69 Guaiac Test for Blood. (Guajakprobe für Blut.) K. Schroeder. Id. O. Schumm.
70 *Surgical Treatment of Exophthalmic Goiter. (Chirurgische Behandlung der Basedow'schen Krankheit.) A. Hildebrandt.

65. **Scopolamin-Morphin Anesthesia.**—Korff is the father of this technic, and he here discusses its present status. He maintains that this method is peculiarly adapted for the longer and more serious operations, citing in particular Kreuter's experience in a hundred cases in which he made two injections, instead of three, completing the operation under chloroform, with no postoperative pneumonia or bronchitis. Korff is convinced that several anesthetics, in small amounts, are less toxic and do less harm than a single one in large doses, as in simple ether or chloroform anesthesia.

70. **Surgical Treatment of Exophthalmic Goiter.**—Hildebrandt discusses the history and ultimate results of surgical treatment of exophthalmic goiter. His figures show that the mortality of the operation is no greater than that of the disease under internal treatment alone. Internists and surgeons must work with courage side by side in this promising field.

Correspondenz-Blatt für Schweizer Aerzte, Basle.

July 15, XXXVIII, No. 14, pp. 449-480.

71 *Etiology and Treatment of Vomiting of Pregnancy. (Schwangerschaftserbrechen.) E. Schwarzenbach.
72 Gangrenous Appendicitis and Early Operation. T. Kocher. Commenced in No. 13.
73 Roentgen Treatment. E. Sommer.

71. **Treatment of Vomiting of Pregnancy.**—Schwarzenbach reports success in the treatment of pernicious vomiting of pregnancy based on the assumption that the supposed pregnancy toxin is eliminated in the stomach, as is the case with morphin. In the morning the fasting stomach must contain

unusually large amounts of the poison, and it must exert its toxic action most intensely when there is nothing in the stomach to dilute or absorb it. Lavage of the stomach on first waking is the ideal, and this can be accomplished by copious drinking. If the ingested fluid is vomited, the stomach is thus prepared for breakfast, part of which the patient can generally retain. In order to stimulate the appetite he suggests dishes outside the ordinary menu, merely avoiding greasy and indigestible articles, but even these may at times be permitted if there is longing for them. More or less of this food is retained, and the vicious circle is broken. The patients are taught never to let the stomach be empty long. Something must be taken every two or three hours, always before sleeping and during the night if the patient wakes spontaneously and always the first thing in the morning. As in case of seasickness, the horizontal position is favorable, especially in the morning, and everything that works against anemia of the brain, which has such an influence on the tendency to vomit. Reflex action from the stomach may also induce or aggravate the anemia in the brain. After apparently complete cure he has observed recurrence only in a few instances when, for some casual reason, the patient went unusually long without eating. He adds that those who ascribe his success to pure suggestion must at least acknowledge that this method is harmless, simple and cheaper than institutional treatment.

Deutsche medizinische Wochenschrift, Berlin.

July 16, XXXIV, No 29, pp 1257-1296

74 To Obtain Typhus Toxin with Lecithin and its Immunizing Action (Gewinnung von Typhustoxin durch Lecithin.) R Bassenge
75 Specific Treatment of Pulmonary Tuberculosis Ritter
76 Marmorek's Serum. P Glaessner Id. F Kohler
77 Pancreatic Ferments in Therapeutics (Trypsin und Amylopsin.) A Pinkuss
78 *Experiences with Injuries from Lightning and Electricity (Verletzungen durch Blitz und Elektrizität.) Pfahl
79 *Surgical Treatment of Sciatica (Chirurgische Behandlung der Ischias.) A. Pers

78. **Electric Accidents.**—Pfahl has had occasion to examine nine victims of electric accidents. All but three had been struck by lightning. In all the accidents from lightning or from a very powerful electric current, unconsciousness was observed, of longer or shorter duration. Organic injury was evident in every case, and in all the electric accidents there were functional nervous disturbances. In five of the nine victims the eyes were injured; in one case detachment of the retina in one eye followed. He warns of the urgent necessity for examination of the eye by an ophthalmologist as soon as possible after injury from lightning or any form of electricity. The German Imperial Council of Health has issued a guide for first aid in electric accidents, which he recommends, and he cites recent German legal decisions to the effect that accidents from lightning, in the open air or in buildings, affecting a person at his work, are injuries calling for an indemnity if he is insured against industrial accidents, whether the circumstances favor attraction of the lightning or not.

79. **Surgical Treatment of Sciatica.**—Pers states that he has treated 47 patients with sciatica of from a few months to 45 years' duration, including 13 who had long been bedridden on this account. His treatment is based on the assumption that the trouble is the result of inflammation around the nerve or resulting adhesions. Loosening the inflamed nerve arrests the inflammation, and detaching the adhesions removed the conditions responsible for the pain. In every case—whether the sciatica was of recent or very old development—the patients awoke from the anesthetic entirely freed from their old pains and disturbances. In the 42 cases free from complication, recurrence was observed in 3 instances, but it yielded to a repetition of the neurolysis. He advises this treatment for every case of sciatica rebellious to ordinary measures. He exposes the nerve at its emergence from the sciatic foramen, and runs his finger under the nerve, mobilizing the parts that are found pink, and the adhesions, working from above downward. The nerve must be inspected at once to see if it is pink before the manipulations have induced hyperemia. The benefit can be regarded as constant and permanent—the few recurrences were undoubtedly the result of incomplete releasing of adhesions. The inflammation and adhesions may develop anywhere along the course of the nerve, but their most frequent site is at or near its point of emergence.

Jahrbuch für Kinderheilkunde, Berlin.

July 4, LXVIII, No 1, pp 1-130

80 Behavior of Child's Organism in Response to Foreign Albumin, and its Ability to Produce Antibodies (Verhalten des jugendlichen Organismus gegen artfremdes Eiweiss.) L Moll
81 *Physical Determination of Enlarged Bronchial and Mediastinal Glands (Physikalischer Nachweis vergrösserter Bronchial und Mediastinaldrusen.) M Nagel.
82 *Rheumatism as After-affection of Chorea (Rheumatismus als Nachkrankheit der Chorea minor.) E Ferraris-Wyss

81. **Physical Signs of Enlarged Bronchial and Mediastinal Glands.**—Nagel gives an illustrated description of various methods of diagnosing enlarged glands in the chest, based on the literature and considerable clinical and anatomic research. Among the chief signs are the loud tracheal breathing, audible between the first and fourth thoracic vertebræ, and the bronchial breathing sounds over the manubrium; palpation findings, especially tenderness to pressure of the spinous processes and Neisser's sound percussion. The sound is introduced into the esophagus and inflated, with tests of the tenderness of the swollen bronchial glands. Inspection frequently shows distention of the visible veins in the neck and upper chest, from hindrance of the blood stream passing into the superior vena cava or into the innominate artery. Roentgen examination is also useful in diagnosis of this condition, as also percussion of the spine. The latter gave positive findings in 14 out of 26 children with enlarged bronchial glands, the results being confirmed in 7 cases by Roentgen examination. In another group of 50 children with enlarged bronchial glands, percussion of the spine gave positive findings in 16. Injection of paraffin to simulate enlarged bronchial glands in a cadaver gave exactly similar findings. Dulness over the fifth, sixth and seventh vertebræ may be produced by tumors as well as by enlarged glands. This spinal dulness may also be induced by a mitral defect, but the dulness in this case is lower than with swollen glands.

82. **Rheumatism as an After-Affection of Chorea.**—Wyss studied 51 cases of chorea minor at Zurich, 1874-1907. In 41, that is in 80.4 per cent., a certain connection between chorea and acute articular rheumatism or endocarditis was evident, either in the patients themselves or in their parents, brothers or sisters. Rheumatism had preceded the chorea in 16 of the 51 children, that is in 31.3 per cent., while rheumatism followed the chorea later in 40 per cent. of the 35 children whose later history was known. Endocarditis was observed at the time or later in 54.3 per cent. of the 51 choreic children. He calls chorea, rheumatism and endocarditis the three acts of a single drama.

Medizinische Klinik, Berlin.

July 19, IV, No 29, pp. 1093-1136

83 *Roentgen Detection of Incipient Pulmonary Tuberculosis (Wert der Roentgendiagnostik der Fruhtuberkulose der Lunge.) P. Krause
84 Balneotherapy in Ear Affections (Indikationen und Kontraindikationen für [illegible] Massnahmen bei Erkrankungen des [illegible] ger.
85 Results at Hochenegg [illegible] on Biliary Passages (Resultate unserer Operationen an den Gallenwegen.) R. Bachrach
86 *Ankylosis of the Jaws (Ankylosis mandibulae.) F. Kirstein
87 Technic of Peroral Intubation F. Kuhn
88 Atropin in Treatment of Incipient Myopia. (Atropinkuren [illegible]
89 *[illegible]
90 [illegible] for Diagnosis, Especially of Syphilis H Much Commenced in No 28

83. **Roentgen Diagnosis of Incipient Apical Tuberculosis.**—Krause presented this article at the German Roentgen Congress at Berlin last spring. He states that the x-rays show apical infiltration as much more extensive than would be supposed from the percussion findings. When the percussion findings are negative or dubious, fluoroscopy or, better still, a skiagram will frequently reveal an apical process. Simple catarrhal processes in the early stages cast no shadow. When long protracted, the apex may not grow light during inspiration, and a skiagram will sometimes reveal an incipient apical process which escapes detection by other means. The apex

may be abnormally high, but this has differential value only with a difference of from 1 to 1.5 cm. The width of the apex has not yet been studied with the x-rays enough to be applied in diagnosis. Ossification of the first costal cartilage shows up well in a skiagram, and may be accepted as a sign of incipient tuberculosis in Freund's sense. The apex does not grow lighter during inspiration as in health. The movement of the diaphragm is sometimes defective, although restriction of its movements on the affected side can not be accepted as a special symptom. All this applies only to adults. In children the apical findings are generally negative; but all the more important is the finding of changes in the shadow cast by the hilus and bronchial glands enlarged by induration, caseation, calcification, and processes of infiltration in the vicinity of the hilus and bronchi. Mixed infection from the pneumococcus frequently casts a shadow as of central pneumonia, but the x-rays show the process slowly progressing after defervescence, and a few weeks later percussion and auscultation may reveal its tuberculous nature.

86. **Ankylosis of the Jaw.**—A young man fell on his chin and in a few days the movements of the lower jaw were limited and in the course of years complete bilateral ankylosis developed. Kirstein reports the case and reviews the literature, citing a total of 118 cases, 34 of traumatic origin. In operating, preparations must be made, he says, for eventual tracheotomy. The results of operation have been satisfactory, although recurrence has been observed in 12 out of 103 operations.

89. **Asthma in Children.**—Stegmann is a neurologist and he reports three cases of severe asthma in children, from 5 to 9 years old, in which he succeeded in curing the asthma and enabling the children to develop a normal physical and mental life. In all these cases, as in others of which he knows, the mothers were extremely nervous and anxiously solicitous to protect the child from catching cold. Two were only children, and the grandmothers suffered from asthma. He ascribes the first attack in one case to the peculiar suffocating odor of feather beds as used in the rural district where the child was visiting for the first time. When the first attack occurred and the diagnosis of asthma had been made and its incurable nature discussed, or if the child had noted the anxiety and depression of the parents, the foundation was laid for the perpetuation of the nervous trouble. In these three cases the children were under constant medical care for years, and incredible precautions were taken against their "catching cold" and exposing themselves to infectious influences. In treatment he found the essential factor to be the treatment of the parents, that is, to tranquilize them and give the child peace. This was most rapidly accomplished by hypnosis. After the first sitting the attacks of asthma subsided, and the children were then released from the solicitous precautions previously systematically enforced, and the parents could sleep at night. This alone would have justified the psychic treatment, even if it had not benefited the asthma; he was surprised at the favorable influence on the asthma from the suggestion. The hypnosis treatment, he believes, is only of subordinate importance for the final results. It served mainly to tranquilize the patient and the parents at once, and to make the child more amenable to the medical suggestion. He adds that this psychic treatment is required fully as much in cases with an organic element as in those without. He reports his cases in detail, as he thinks that such experiences are important for a better understanding of the way in which asthma becomes fastened on adults, and that they point the way to prophylaxis.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin.

July, XXVIII, No. 1, pp. 1-130.

91 *Primary and Ultimate Results of Ovariotomies for Anatomically Malignant and Dubious Tumors. (Ovariotomien bei 'nd zweifelhaften Geschwülsten.)
92 *Tl . (Larynx und Schwangerschaft.) J. Hofbauer.
93 Kraurosis Vulvæ. W. Rosenfeld.
94 *Etiology and Treatment of Dysmenorrhea. P Mathes.
95 *Correction with the Sound of Displacement of Uterus. (Sondenaufrichtung.) A. Goenner.
96 *Intrauterine Tents and Drains (Intrauterinstifte.) Id.

91. **Ovariotomies for Tumors.**—Schmidlechner states that in the ovariotomies performed at the clinic for women's diseases at Budapest, 1880-1904, a primary cure was obtained in 82.86 per cent. of 35 cases of carcinoma and 14.2 per cent. permanent cures; primary cures in 96.67 per cent. of 60 cases of serous adenocystoma and 82.5 per cent. permanent cures; primary cures in 88.89 per cent. of 27 cases of sarcoma of the ovary and 85 per cent. permanent cures. He says that after removal of a tumor from one ovary it seldom develops in the other; the prognosis is more unfavorable with bilateral growths. The best prognosis is given by localized growths: papillary proliferations on the surface do not influence them much. The prognosis is least favorable in case of implantation on the peritoneum, although these grafts may vanish after removal of the tumor.

92. **The Larynx and Pregnancy.**—A singing teacher called Hofbauer's attention to the great change in the singing voice during pregnancy, saying that as a rule the voice becomes harsh and loses its richness and timbre, but in a few cases the voice becomes richer and softer. The changes in the pitch and tone may persist after the confinement. Hofbauer has since made a special study of the behavior of the larynx during pregnancy. The clinical and histologic findings confirm in every respect the assertions of professional singers in respect to the correlation between the genital processes and the larynx. His findings throw light on the refractory behavior of laryngeal catarrh during pregnancy, and the graver prognosis of laryngeal tuberculosis. Küttner has recently reported a fatal outcome in 200 out of 231 cases of laryngeal tuberculosis during pregnancy. During pregnancy the larynx loses most of its ciliated epithelium, and thus opposes less resistance to invading infection.

94. **Dysmenorrhea.**- Mathes calls attention to the large group of cases in which the dysmenorrhea is the direct result of asthenia and enteroptosis. Vague symptoms of appendicitis should always suggest a search for enteroptosis before operating. Enteroptosis may simulate acute peritonitis in some cases. All these symptoms, including tenderness, diffuse pain at the slightest touch, coated tongue, vomiting, obstipation, etc., subside during rest in bed and appropriate treatment.

95 and 96. **Correction of Uterine Displacements.**—Goenner advocates the gentle use of a sound to straighten the uterus free from adhesions in case of failure of bimanual reduction. It is especially useful for obese women and for virgins. In regard to uterine tents and drains he remarks that a forward curve is preferable to a straight tent. Hard rubber dipped in boiling water can be bent to this shape. Tents are contraindicated by inflammation of any kind, but may prove useful in dysmenorrhea and in sterility, the result of defective development. A curving intrauterine tent or profusely perforated drain soon proves effectual. He prefers a tapering metal drain, 3½ inches long, with four rows of three large openings, the diameter 4 or 5 mm. at the tip and 6 or 8 mm. below. The mucosa sucks into the holes and holds the drain firm. He first uses a tent and then inserts the drain, removing it every three or four days in case of much secretion, otherwise only at menstrual periods.

Münchener medizinische Wochenschrift.

July 14, LV, No. 28, pp. 1473-1520.

97 Hemolysins, Bacteriolysins and Opsonins v. Baumgarten.
98 Structure of Opsonins: Research on Typhoid and Meningitis. A. Böhme.
99 *Spinal Anesthesia for Gynecologic Operations. (Rückenmarksanästhesie für die gynäkologischen Bauchoperationen.) E. Holzbach.
100 *Periodic Acetonemia in Older Children Hecker.
101 Determination of Blood in Urine by Spectroscopic-Chemical Methods. (Nachweis von Blut im Harn.) O. Schumm.
102 *Pulmonary Emphysema and Asthma. (Rückwirkung des Lungenemphysems auf den Verlauf des Asthmas.) M. Saenger.
103 Results of Modern Treatment of Scoliosis. (Was dürfen wir von der heutigen Skoliosenbehandlung erwarten?) K. Wahl.
104 Menthol Poisoning. A. Schwenckenbecher.
105 Milk Periods in Course of Treatment of Obesity. (Milchtage bei Entfettungskuren.) L. Roemheld.

99. **Spinal Anesthesia for Gynecologic Laparotomies.**—Holzbach reviews his experience with 250 laparotomies done under

spinal anesthesia. He regards the spinal technic as far from being an ideal method of anesthesia, but it is so superior to general anesthesia in many respects, he declares, that he prefers it for gynecologic operations, and is confident that the technic will soon be perfected.

100. **Periodic Acetonemia in Children.**—Hecker has observed five cases of gastric disturbances accompanied by elimination of acetone and acetic acid; the breath had the peculiar odor of acetone at times. Only a few of the children had fever during these attacks The children were between 3 and 11 years old. He ascribes the vomiting to the effort of Nature to throw off the acetone bodies. He believes that the trouble is the result of some constitutional anomaly, probably defective development of the function of breaking down of fats. The disturbance in this function has probably some connection with disturbances in the leucocyte system Ehrlich believes that the lymphocytes originate in the lymph glands, and Poulain has determined that the lymph glands have a great influence on the absorption of fat by their fat dissolving ferment. Hecker ascribes periodic acetonemia, therefore, to some developmental defect, predominant in the lymphatic system. The blood in these cases should be examined during an attack and during the intervals. Treatment may be by suggestion (preparations for saline infusion, etc.). Fasting for two days may be beneficial, cautiously resuming food with little fat and albumin. He has found small pieces of chocolate and dry bread very useful, with alkalies. The latter proved especially beneficial in one of his more chronic cases In the intervals, general hygiene, hydrotherapy, hot packs and little meat, with occasional use of hydrochloric acid and pepsin, may be useful.

102. **Treatment of Asthma.**—Saenger advocates exercises to train the respiratory center and organs to get along, at need, with a small amount of air. Just as a person can train himself to stay under water a long time, so he thinks that persons with a tendency to asthma and the resulting pulmonary emphysema can train their organs so that they can stand the stress of the attack of asthma They should exercise themselves in voluntary restriction of their breathing, learning to *breathe exclusively or predominantly by means of the abdominal muscles engaged in respiration.* This not only rests the lungs, but closes the small bronchi during expiration, as by a valve, and thus prevents acute inflation of the lungs Persons thus trained are freed from their paroxysmal suffocation and bronchial catarrh, although the emphysema may persist.

Wiener klinische Wochenschrift.

July 9, XXI, No. 28, pp. 1005-1042.

106 Connection Between Antitoxin Content and Curative Potency of Antitoxic Sera. (Beziehungen des Antitoxingehaltes antitoxischer Sera zu deren Heilwerte) R Kraus.
107 Bacterial Anaphylaxis R Kraus and R Doerr.
108 Percutaneous Tuberculin Reaction by Moro's Technic H Kanitz
109 *Dangers of Ocular Reaction to Tuberculin. (Gefahren der Ophthalmoreaktion) R Polland
110 Modern Methods of Diagnosing Typhoid W. Spat.
111 Simple Instrument for Endovesical Operations V. Blum
112 *Method of Dissolving Foreign Bodies in the Bladder (Endovesikale Auflosung von Fremdkorpern) E Pollak.
113 Bilirubin Content of Pneumonic Sputum. H. Popper

July 16, No 29, pp 1043 1078.

114 Pathologic Importance of Tuberculin Reaction. F. Hamburger
115 Influence of Atoxyl on Leucocytes W L. Yakimoff
116 Rôle of the Antibodies in Tuberculin Reaction. E Weil and W. Strauss

109. **Ocular Tuberculin Reaction.**—Polland urges that the ocular tuberculin reaction should be restricted to cases in which differentiation by other means is impossible as his experience in three cases shows that it is by no means a harmless procedure. None of the patients had ever had any eye affection, but suppurative inflammation followed instillation of the tuberculin, requiring weeks of specialist treatment and leaving a defect in the cornea in two cases with considerable impairment of vision in one

112. **Method of Dissolving Foreign Bodies in Bladder.**—Pollak removed a wax taper from the bladder of a man of 28 by injecting 20 c.c. of benzin after emptying the organ The benzin was left in the bladder for thirty minutes, and it was then rinsed out with salt solution, the procedure repeated several times with smaller amounts. The wick, 7 inches long, was spontaneously expelled in the urine the next day. The wax collected from the urine weighed 50 grains. In Lohnstein's case, previously mentioned in these columns, the patient had introduced a stick of tallow and its unsuspected presence in the bladder for several months had caused severe hematuria and other symptoms. Nearly 75 grains of tallow were recovered The benzin caused no disturbances in either case, and allowed the removal of the foreign body safely and promptly Hochenegg has recently reported still another case. The bladder was much inflamed from the presence of the wax, and to reduce the irritation from the benzin the bladder was partly filled with water, on which the wax and benzin floated, thus reducing the amount of contact with the walls of the organ, while the benzin was still acting on the foreign body.

Zentralblatt fur Chirurgie, Leipsic.

July 11, XXXV, No 28, pp 841 872

117 *"Milkers' Felon" (Panaritium der "Melker") A Peiser
118 *Prevention of Vomiting During First Whiffs of Ether (Mittel gegen Erbrechen beim Aetherrausch) C Ritter

July 18, No 29, pp 873 904

119 Etiology of Congenital High Shoulder (Aetiologie des angeborenen Schulterblatthochstandes) H Teske
120 Osteoplastic Mediotarsal Enucleation C Bayer

117. **"Milkers' Felon."**—Peiser calls attention to the sanitary importance of the chronic felon on the hands of dairy employés. Inflammation is maintained by penetration of small hairs from the cow's udders The lesion will not heal unless the hair in the depths is removed He has encountered a number of such cases.

118. **Constriction Hyperemia to Prevent Vomiting from Anesthetic.**—Ritter presents a number of arguments to prove that ether acts much more powerfully on the brain when it is anemic than when it is congested He describes experiments on dogs and 62 clinical cases which prove that a constricting band applied to the neck materially reduces the harmfulness of poisons for the brain. Especially with operations done during the first whiffs of ether (*Aetherrausch*) the Bier constricting band applied to the neck, immediately after the close of the operation and left in place for half to one hour, while the patient reclines, has put an end to the vomiting which previously was the almost invariable accompaniment of the ether anesthesia. He suggests that the constriction hyperemia might also prove beneficial in vomiting from other causes, in pregnancy or in inflammation of the brain.

Zentralblatt für Gynakologie, Leipsic.

July 11, XXXII, No 28, pp 905 936

121 Acute Peritonitis Before and During Childbirth (Akute Peritonitis vor und in der Geburt) G Leopold
122 Acute Paralysis of Stomach with Secondary Occlusion of Duodenum (Akute Magenlahmung mit sekundärem Duodenalverschluss) H Albrecht
123 Two Cases of Hydrorrhea of Amniotic Fluid (Hydrorrhea uteri gravidi amnialis) W Ruth

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124 Cesarean Section by the "Extraperitoneal" and the "Suprasymphyseal" Technics (Der "extraperitoneale" und der "suprasymphysäre" Kaiserschnitt) M Hofmeier
125 Improved Instrument for Perforation (*Perforatorium*) Nacke

Gazzetta degli Ospedali e delle Cliniche, Milan.

July 5, XXIX, No 80, pp 841 856

126 Various Localizations of Murmur from Mitral Insufficiency. C P Goggia
127 *Cerebellar Syndrome Cured by Antisyphilitic Treatment E Greggio
128 *Improved Technic for Antityphoid Vaccination (Studii sul tifo) A Bruschettini and A Paccanaro
129 Technic of Specific Antituberculosis Treatment (Trattamento specifico antitubercolare) G Ghisellini

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130 *Pathology and Clinic of Tuberculosis in Light of Recent Conquests E Maragliano
131 *Rheumatism of Brain (Reumatismo cerebrale) U. Silva
132 Behavior of Elastic Tissue in Experimental Intestinal Stenosis (Genesi delle alterazioni del tessuto elastico) M Biagi
133 Spinal Anesthesia (Rachianalgesi lombare con la tropococaina) G Monzardo
134 Wire Suture of Fractured Clavicle (Riunione operatori nelle fratture della clavicola) A Cianni

127. Cerebellar Syndrome Cured During Antisyphilitic Treatment.—Greggio's patient was a robust man of 34 with a gradually developing syndrome suggesting a tumor in the cerebellum. Before the final decision to operate, antisyphilitic treatment was given a trial—although there was nothing to suggest syphilis—and all the symptoms gradually retrogressed, the patient returning to work completely cured.

128. Improved Technic for Immunization Against Typhoid.—Bruschettini and Paccanaro announce that guinea-pigs resisted otherwise fatal doses of typhoid toxin after a preventive injection of vaccine to which had been added one-tenth part of an extract of leucocytes obtained from the pleural cavity after injection of an irritating substance. The animals showed no signs of disease fifty days later, although the controls had all died in the first forty-eight hours. They think that the leucocyte extract has the power to render the vaccine absolutely harmless without detracting from its specific properties.

130. Tuberculosis in Light of Recent Research.—In the course of this postgraduate address by Maragliano he calls attention to the difference in the fever due to the action of tuberculous toxin and that from the toxin of pyogenic germs, and from the fever caused by the toxins generated by diseased and dying tissue cells. This toxic action of cells undergoing destruction has been shown by experimental injection of extracts of solutions of various dying tissues and blood corpuscles. Carbone declares that the pneumococcus acts more by the toxins produced by the tissues it devitalizes than by its own toxins. Bruschettini has recently announced that guinea-pigs succumbed much more rapidly to typhoid toxin when to it had been added the products of the degeneration of the intestinal epithelium. Barlocco's research has shown that under the hemolytic action of the endotoxins, toxic and pyrogenic substances derived from the destroyed blood corpuscles pass into the circulation. Extract of tuberculous lung tissue has a much more pronounced hemolytic action than extract of healthy lungs. Mircoli has shown that red corpuscles desiccated and then injected in solution into animals cause fever and cachexia. This result is more pronounced if the red corpuscles came from sick or ailing subjects. All these facts show the importance of the phenomena resulting from the disintegration of the cells, superposed on the initial infection. Especially in tuberculosis, the primary influence of the tubercle bacillus becomes gradually subordinate to the results of the other pathogenic elements which in time dominate the situation, transforming the primary disease into a new morbid process which has its new laws and may require its own special therapy, and explains the failures in specific treatment of tuberculosis.

131. Rheumatism of the Brain.—Silva reports three cases, in hard drinkers, of acute rheumatic fever assuming the meningeal form with extremely high fever. When the intense hyperpyrexia developed, the joint symptoms disappeared. Application of ice gave only transient benefit. After death the temperature continued to rise for about fifteen minutes, reaching nearly 108 F. The autopsy findings were not specially positive.

Policlinico, Rome.

June 28, XV, Practical Section. No. 26, pp. 805-836.

135 Filtrability of Trachoma Virus. L. Marongiu.

July 5, No. 27, pp. 837-868.

136 Familial Dystrophic Infantilism. L. Ettore.

July 12, No. 28, pp. 869-900.

137 *Differential Diagnosis Between Transudates and Exudates by Rivalta Test. W. Janowski.
138 Another Case of Osteomalacia Cured by Suprarenal Preparations. G. Rocchini.
139 Nervous Affections Among the Poor at Rome. (Malattie del sistema nervoso dominanti nelle classi povere de Roma.) G. Baschieri-Salvadori.

137. Differentiation of Transudates and Exudates.—Janowski has examined the effusion in 122 cases by Rivalta's technic; one or more drops of the effusion are added to 100 c.c. of water containing two drops of glacial acetic acid. As a drop of exudate makes its way down through this fluid it leaves a bluish trail like a puff of cigarette smoke in the water, each drop leaving a separate trail. The fluid remains clear and unaltered when the added drop is that of a transudate. He has found this test delicate and reliable.

Norsk Magazin for Lægevidenskaben, Christiania.

July, LXIX, No. 7, pp. 641-736.

140 Experiences with Iron Splinters in Eyes. (Jernsplint i ?iet.) H. Lystad.
141 *Artificially Induced Hyperemia in Treatment of Nasal Affections. (Bier's stasebehandlung anvendt i rhinologien.) R. Gording.
142 Pathologic Embryology. V. Magnus.

141. Suction Hyperemia in Rhinology.—Gording writes from the rhinologic clinic at Christiania to extol the benefits of the mask devised by Sondermann for applying suction to the nose and accessory cavities. Suction up to a negative pressure of 120 mm. mercury can be obtained even in the maxillary sinus. The cavities are evacuated, healing hyperemia is induced and completed by the reaction after the mask is removed. Several instructive cases are related, showing its advantages, particularly in the after-treatment of sinusitis. Sondermann's application of this principle of aspiration to the urethra was mentioned in The Journal, Dec. 16, 1905, page 1913, and for purulent rhinitis, Sept. 23, 1905, page 953.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A Manual of Midwifery. By Thomas Watts Eden, M.D., C.M. Edin., F.R.C.P. Lond., F.R.C.S. Ed., Obstetric Physician with Charge of Out-Patients and Lecturer on Practical Midwifery and Gynecology, Charing Cross Hospital. Cloth. Pp. 555, with illustrations. Second Edition. Price, $3.50. Chicago: W. T. Keener & Co., 1908.

Essentials of Dietetics. By Amy Elizabeth Pope, Instructor in Dietetics in the Schools of Nursing of the New York Hospital, and Mary L. Carpenter, Director of Domestic Science of the Public Schools, Saratoga Springs, New York. Cloth. Pp. 249. New York: G. P. Putnam's Sons, 1908.

Arbeiten aus dem Pharmazeutischen Institut der Universitat Berlin. Herausgegeben von Dr. H. Thoms, Professor und Direktor des Pharmazeutischen Institutes der Universitat Berlin. Cloth. Pp. 340. Vol. V. Report for 1907. Berlin: Urban & Schwarzenberg, 1908.

Pulmonary Tuberculosis and Its Complications. By Sherman G. Bonney, A.M., M.D., Professor of Medicine, Denver and Gross College of Medicine, Denver. Cloth. Pp. 778, with illustrations. Price, $7.00. Philadelphia: W. B. Saunders Co., 1908.

Principles of Pathology. By J. George Adami, M.A., M.D., LL.D., F.R.S., Professor of Pathology in McGill University. Vol. I General Pathology. Cloth. Pp. 918, with illustrations. Price, $6.00. Philadelphia: Lea & Febiger.

Points of Practice in Maladies of the Heart. By James Sawyer, Knt., M.D. Lond., F.R.C.P., F.R.S. Ed., F. S. A., Consulting Physician to Queen's College. Cloth. Pp. 96. Birmingham: Cornish Brothers, 1908.

Medical Gynecology. By Samuel Wyllis Bandler, M.D., Fellow of the American Association of Obstetricians and Gynecologists. Cloth. Pp. 675, with illustrations. Price, $5.00. Philadelphia: W. B. Saunders Co., 1908.

Ophthalmic Surgery. By Dr. Josef Meller, Privat docent and First Assistant K.K.II. University Eye Clinic, Vienna. Cloth. Pp. 262, with illustrations. Price, $3.00. Philadelphia: P. Blakiston's Son & Co., 1908.

Consumption. By N. S. Davis, A.M., M.D., Professor of Principles and Practice of Medicine, Northwestern University Medical School. Cloth. Pp. 171. Second Edition. Price, $1.00. Philadelphia: F. A. Davis Co., 1908.

The Eighteenth Annual Report of the Eye, Ear, Nose and Throat Hospital of New Orleans, La., 1907. Paper. Pp. 72. New Orleans: L. Graham Co., 1908.

The Chaille Jubilee, also Annual Report of the Dean of the Medical Department of Tulane University of Louisiana, May 20, 1908. Paper. Pp. 27.

Essentials of Surgery. By Alwyne T. Compton, F.R.C.S. Cloth. Pp. 428, with illustrations. Price, $1.50. Chicago: W. T. Keener & Co., 1908.

Die Prüfung Nichtoffizellen Präparate. Part I. Von Dr. Gustav Mossler. Cloth. Pp. 133. Part 1. Vienna: Carl Fromme.

Catalogue of the Officers and Fellows of the Massachusetts Medical Society. Paper. Pp. 166. Boston: D. Clapp & Son.

Transactions of the American Society of Moral Prophylaxis. Vol. II, 1908. Paper. Pp. 246.

Proceedings of the Delaware County Institute of Science. Vol. III. No. 4. July 1908. Paper. Pp. 180.

Woodcroft, Hospital for Nervous and Mental Diseases. Paper. Pp. 12.

First Annual Report, Tuberculosis League. Paper. Pp. 24.

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Original Articles

CHRONIC PERITONITIS WITH COMPLETE OBSTRUCTION,

CAUSED BY NUMEROUS CONSTRICTIONS, OF A PREVIOUSLY UNDESCRIBED CHARACTER, THROUGHOUT THE INTESTINE.*

MILES F. PORTER, A.M., M.D.
Surgeon of Hope Hospital, Professor of Surgery in Indiana University School of Medicine.
FORT WAYNE, IND.

Patient.—Dr. L. A. H., aged 35, married, was admitted to Hope Hospital May 24, 1907.

History.—Grandmother died of cancer. One aunt died of consumption, and an uncle had "white swelling." Aside from children's diseases, the patient had had an attack of pneumonia in 1886, followed by empyema for which a rib was resected and drainage instituted. Complete recovery followed but the diseased chest still remained considerably contracted. Drank excessively whole of 1903, but is a total abstainer now. In December, 1906 (six months before admission), after a full meal of sausage, he was taken with severe abdominal cramps and vomiting, for relief from which he took ⅜ gr. of morphin hypodermatically. The pain was worse in the lower abdomen, and especially on the right side, and some tenderness, localized over the painful area, followed. This attack caused him to quit work for one day. Six weeks later he had a similar attack, accompanied by vomiting of a light, bright green fluid and a more severe one occurred March 28, 1907. The bowels were constipated. A few days before coming to the hospital he had a formed, putty-colored stool. No elevation of temperature was present during those attacks. Patient stated that abdomen was sore when he was jolted and complained of accumulation of gas in the stomach, which was relieved by belching or the use of the stomach pump. Frequently vomited bright greeen fluid, and complained of a metallic taste in the mouth. Very difficult to get the bowels to move; the stools were not formed.

Examination.—Fairly nourished, good color, dark complexion. Abdomen rather retracted and boggy. An indistinct mass was felt in right pelvic region, both on rectal and abdominal palpation. Examination of the chest was negative. Pulse 62; temperature 97.6 F. Up to two days prior to operation the case was in charge of Dr. G. W. McCaskey, to whom I am indebted for the following clinical facts: The blood picture was normal. Urine normal in character but reduced in amount, only 18 ounces being passed in the twenty-four hours. Bacteriologic examination of vomitus was made by Dr. Rhamy. He reported that he found a bacillus which culturally and microscopically gave characteristics of the *Bacillus typhosus.* Widal reaction positive. Opsonic index to autogenous bacilli, 47. No reaction to two injections of old tuberculin of 5 and 10 mg., respectively. Permeability of the intestinal tube was demonstrated by the charcoal test. No diagnosis could be made other than that of a low grade, wide-spread peritonitis with incomplete obstruction of the bowels. An exploratory operation was thought advisable and accordingly done May 26, 1907, two days after his entrance into the hospital.

Operation.—Ether anesthesia. Midline incision. Practically universal close adhesions were found between contiguous bowel surfaces. A little fluid was found. Very little adhesion between visceral and parietal peritoneum was found. The appendix was freed and removed but presented nothing abnormal. The bowel adhesions were fairly completely broken up. The small intestine seemed abnormally short and nowhere constricted, but on the contrary seemed unusually large in its transverse diameter, and on palpation felt as though it were filled with fish worms. Attempts to empty sections of the bowel by stripping were ineffectual. The surface of the bowel was grayish-white, and the non-adherent surfaces perfectly smooth. *An incision was made into the ileum.* No escape of feces or gas. Bowel seemed full of mucous membrane arranged in accordion-like folds. *A probe could not be made to pass* in either direction. The finger could be made to pass in either direction by carefully working the folds aside. It was concluded that the case was hopeless, even temporary relief being out of the question. Accordingly, the intestine was closed by a line of through-and-through catgut sutures and over this a line of continuous linen sutures, and the wound in the abdomen closed by buried catgut and adhesive plaster. The patient left his room for the operating room at 9 a. m. and returned at 11:45 a. m. Just before the operation his pulse was 70, and temperature 97.6 F. Twelve hours after the operation his pulse was 102 and his temperature 98.2 F. Sixteen hours after the operation a catheter was inserted and the bladder found empty. From the time of the operation until his death, which occurred on the morning of May 29 (three days after the operation), but eight ounces of urine were secreted. It will be remembered that the urine was reduced in quantity when he came into the hospital, owing, no doubt, to the frequent vomiting. There was no vomiting for twenty-four hours after the operation, when it commenced again and continued until his death, which occurred 72 hours after the operation. At first the vomitus was green as before, but later became dark and brown. The temperature gradually rose until it reached 102 F. before death, while the pulse became *gradually more frequent* and more feeble and death occurred from a gradual failure of the vital powers 72 hours after the operation.

Autopsy.—No record was made of the exact time intervening between the death and autopsy, but it was about two hours. Both the wound in the *abdomen and that in the intestine* were found to be healing normally. No evidence of recent peritoneal infection. The stomach presented nothing abnormal except some adhesions to the abdominal wall. The whole of the small intestine and all of the large except the rectum was covered by a layer of grayish-white, rather *strong, plastic* material, about 1/16 of an inch in thickness, which could be stripped off, leaving the underlying peritoneum looking, to the *naked eye, normal. This membrane* was smooth on the free surfaces of the bowel but ragged where it had been adherent. This adventitious coat did not reduce the transverse diameter of the bowel, but shortened it by actual measurement between 70 and 80 per cent. Closely placed parallel incisions around the bowel would allow it to be drawn out to its *normal length,* as would stripping off the false membrane (Fig. 1). Mesentery and omentum were normal. The liver, spleen, and peritoneal surface of the bladder were covered, as were the bowels, by this membrane, but not diminished in size. Transverse section of the bowel shows its lumen to be occluded by transverse folds of mucous membrane (Fig. 2).

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

Specimens were given to Dr. B. W. Rhamy, the pathologist of Hope Hospital, and also to Dr. W. H. Welch of Johns Hopkins. The two reports agree except that Dr. Rhamy found bacilli corresponding to the *B. typhosus*, as did those he found in the vomitus during the life of the patient, while Dr. Welch found no bacilli save those *which "were probably the result of post-*mortem contamination." It was endeavored to eliminate postmortem contamination from the specimen examined by Dr. Rhamy, while no such care was taken of the specimen sent to Dr. Welch. This perhaps explains the difference in the opinions expressed as to the cause of the peritonitis. Dr. Rhamy's diagnosis was chronic plastic peritonitis due to typhoid infection. *Dr. Welch's report is as follows:*

PATHOLOGIC REPORT BY DR. W. H. WELCH

Gross Appearances.—The specimen, which had been preserved in formalin and alcohol, was a portion of the small intestine, evidently jejunum, which had been severed from the mesenteric attachment except at one end, where a small piece of the mesentery was retained. The specimen measured 21 cm (8 in.) in length opposite to the mesenteric border, and 15 cm (6 in.) in length along the mesenteric border For a distance of 13 cm. (5 in) from one end the intestine had been cut open along the mesenteric margin, the remaining 8 cm. (3 in) being unopened. The unopened part of the intestine measured 10 cm. (4 in.) in external circumference, was not collapsed and felt from the outside as if filled with a rather elastic and moderately firm material. The transverse section presented by the cut end of this solid, unopened part of the intestine showed no recognizable lumen, but in its place a complicated mass of folded mucous membrane Only with difficulty and after much twisting and turning could a metallic probe be passed from the lumen corresponding to the opened part of the intestine through the lumen of the unopened part; after inserting the probe this latter part was cut open opposite to the mesenteric attachment, when it is seen that the obstruction was due entirely to infoldings of the intestinal wall occurring at short intervals and kept in place by an organized false membrane attached to the peritoneal surface. This false membrane covered the entire peritoneal surface of the intestine, but over the opened part of the specimen, as stated in Dr. Porter's letter accompanying the specimen, "closely placed parallel incisions around the bowel, made through the false membrane," had permitted this part of intestine to be stretched to its normal length and had effaced the involutions of the intestinal wall, so that here the lumen was free from obstruction and the mucous surface showed no especial abnormality. It was evident that by a similar procedure the same result could be obtained in the remaining part of the specimen. There were no contents found in the lumen of the obstructed intestine after opening it as described.

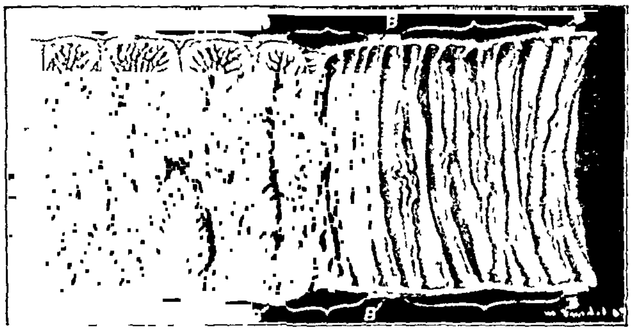

Fig 1 —Showing inner aspect of bowel as seen on section To the left at A A A are seen infoldings, to the right the false membrane B B B has been cut, allowing the bowel to be drawn out to normal length Brackets show bowel pulled out after division of false membrane, length before division ½ inch, after division 2¼ inches Infolding only partly obliterated under short bracket

As has already been stated above the entire outer surface of the intestine was covered with a false membrane. This membrane which was from 0.5 to 1 mm. (1/50 to 1/25 in.) in thickness, was grayish in color, of firm consistence, almost cartilaginous in translucence over most of its extent, and smooth over the greater part of its free surface, although careful inspection showed that much of this surface was finely granular or slightly shaggy as would result from a thin coating of fibrinous exudate on an organized fibrous membrane No remnants of fibrous threads or bands projected from the free surface of the false membrane. This dense and nearly uniform false membrane, consisting apparently of organized fibrous tissue with superficial fibrinous exudate, was attached to the underlying wall of the intestine by fibrillated connective tissue, which was evidently also of new formation. This attachment was in general so loose that there was no difficulty in peeling the dense false membrane off from the intestine, the surface thus exposed appearing smooth in consequence of the delicacy of the severed threads of tissue. The attachment of the false membrane was firmer and more intimate over the intestine situated between the infoldings of the wall, while *it was very loosely attached directly over these infoldings.* No tubercles could be seen with the naked eye in the outer covering of the intestine or elsewhere.

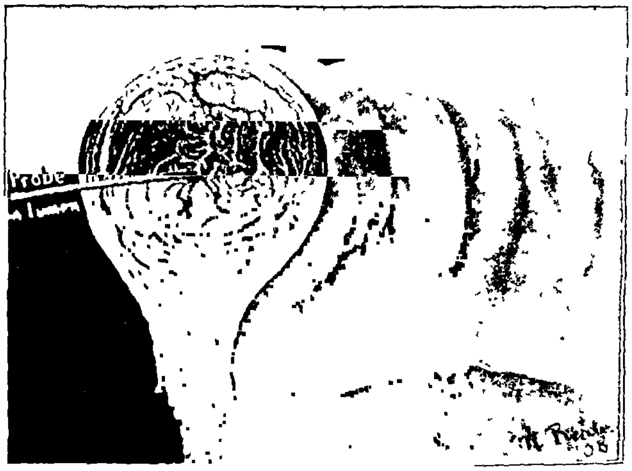

Fig 2 —Showing occlusion of lumen by infolding of the bowel coats

In this examination the greatest interest attached to the infoldings of the intestinal wall which have filled up and obstructed the lumen of the bowel. As these infoldings had been entirely obliterated in the opened part of the intestine by numerous transverse incisions through the false membrane they could be studied only in the eight centimeters of the intestine which had not been cut open previous to the reception of the specimen. The folds were the result of a sharp bending inward of all the coats of the intestinal wall from a direction parallel to the long axis of the intestine to one perpendicular to this axis, much as if a contraction of a narrow band of the circular muscular coat had occurred and persisted or been held in place These segmental, transverse constrictions of the intestinal wall followed each other longitudinally at short intervals, as many as eight being present in a length of 8 cm (3 in.) of intestine Each of the infoldings extended as a rule transversely nearly around the circumference of the intestine, but some were shorter. There was a certain alternating arrangement of the folds such that the shallower part of one fold fitted in between the deeper parts of adjacent folds, whereby a spiral-like arrangement of the intestinal ridges on the mucous surface resulted. This arrangement suggested that each infolding corresponded to the course of the larger vessels which run transversely around the bowel, and in many of the folds it was possible to see these vessels in the lax tissue bridging the depressions. The depth of the folds averaged from

1 to 2 cm. (⅜ to ¾ in.), the tendency was for each fold to become shallower in its course and to disappear before it had completely encircled the bowel. The thickness of the folds was about 1 cm. (⅜ in.), the adjacent muscular coats on each side of a fold being nearly in apposition in the deeper part of the depression and separating slightly above, so as to approximate a V-shape. Between successive folds the lumen appeared of normal dimensions, but this lumen was evident only on stretching the intestine longitudinally as the folds were so close together and so deep as to obstruct it completely. The dense false membrane which covered the outer surface of the intestine did not follow the involution of the intestinal coats into the folds, but it extended bridge-like over the depressions, and it was evident that it was these bridges of false membrane which kept the folds in place. By incising these bridges transversely over the folds the latter were readily obliterated on stretching the bowel longitudinally. There was little evidence of the existence of the constrictions on inspection of the outer wall of the unopened intestine, which appeared merely invested in a uniform grayish coat of false membrane; still careful inspection showed frequent slight external furrows corresponding to the constrictions. The delicate loose connective tissue already noted as present beneath the denser part of the false membrane was, however, present in the depressions, stretching between the adjacent sides of an infolding. It was evident that the existence of the constrictions or folds described must have caused an extraordinary shortening of the intestine. By actual measurement of the part of intestine in which the constrictions were in place (not having been obliterated by transverse cuts through the false membrane) there was found to be a shortening of from 70 to 80 per cent. of the normal length. The inner or mucous surface of the intestine showed no abnormalities other than the ridges resulting from the constrictions. Valvulæ conniventes were high and numerous as in the jejunum. There was no ulceration, necrosis or hemorrhage to be detected with the naked eye. The small tag of mesentery which still remained attached to one end of the intestine was moderately rich in adipose tissue and contained two or three small lymphatic glands, free from any abnormality.

Microscopic Examination.—The mucous membrane was well preserved and appeared entirely normal. The submucosa also was free from any pathologic change. The circular muscular coat appeared somewhat thicker in the part of the intestinal wall included in the constrictions than in that between these but this was probably due to the obliquity of the section of the muscle in the former situation. The spaces between the muscular bundles of the circular coat appeared rather wider than normal. The longitudinal muscular coat also appeared somewhat thicker near and in the depressions, but the same explanation probably applies here also. This coat was in places moderately invaded by new connective tissue extending in from the peritoneal surface. The existence of the constrictions was sharply defined on the microscopic sections by the abrupt change of direction of the mucous, submucous and muscular coats, the angle of the bend being almost a right angle, but with its apex rounded off. The distance between the muscular coats on each side was about 2 or 3 mm. at the angle and became less as they approached the point of union of the muscle at the bottom of the constriction. The peritoneum was entirely replaced by organizing exudate and connective tissue. The original subperitoneal tissue could be made out as a layer firmly connected with the longitudinal muscle. Over this was, first, a layer of richly vascularized fibrillated connective tissue, containing many fibroblasts, plasma cells and lymphocytes. This layer was very lax, with wide meshes and numerous blood vessels over and between the layers of the infoldings of the subjacent coats, whereas it was denser and more intimately connected with the adjacent tissues between the successive constrictions. This layer passed gradually into a dense layer of organizing connective tissue of a rather sclerotic or, in places, hyaline appearance, containing fibers and long fibroblasts, disposed mostly parallel to the longitudinal axis of the intestine, leucocytes and developing capillaries. In this layer, old fibrin in process of substitution by connective tissue was enclosed. On the free surface was a fibrinous exudate, in places old, dense and hyaline in character, and in other places fresh, with fibrillated fibrin and many polymorphonuclear leucocytes, with fragmenting nuclei. The layer described under the gross appearances as "false membrane" consisted mainly of the organizing connective tissue and exudate. Corresponding to the constrictions in the intestinal wall the denser part of the organizing exudate stretched across the interval between the walls of a fold, and did not follow the intestinal wall as it bent abruptly inward. The subjacent delicately fibrillated, very vascular, lax, newly formed connective tissue extended down in long threads which appeared to be stretched and which ran perpendicularly from the under surface of the dense membrane into the depressions, which were thus occupied by this lax tissue with wide meshes. Corresponding to the tops of many of the constrictions the denser texture of the bridges of false membrane extended down for perhaps 3 or 4 mm. (⅛ in.) as a wedge-shaped mass from the under surface of a bridge into the depression, the apex of the wedge lying in the center of a depression. No tubercles were seen in any of the sections. Sections stained for bacteria (for tubercle bacilli, Gram's stain, and methylene blue) showed various bacilli and cocci on the surface of the exudate, but these resembled bacteria found on the surface of the mucous membrane, and were probably the result of postmortem contamination.

Pathologic Diagnosis.—Chronic organizing peritonitis of unrecognized etiology. Intestinal obstruction resulting from numerous transverse infoldings or constrictions of the intestinal wall, these being held in place by bridges of dense, organizing false membrane.

COMMENTS BY DR. WELCH.

After completing the foregoing examination and description I received from Dr. Porter two other parts of the intestine from the same case. These were both of small intestine. One measured 48 cm. in length, and the folds had been largely obliterated by transverse cuts through the false membrane. The other piece was still unopened. The appearances and pathologic changes in these parts were identical with those already described, the same obstruction from infoldings of the intestinal wall existing as in the specimen already described.

The mode of production of intestinal obstruction in this case is most remarkable and quite unfamiliar to me, and, so far as I am aware, previously unrecorded, although I have not searched the literature. The peritonitis was of the organizing, proliferative type associated with fibrinous exudation. It was probably the primary lesion. Anatomic features of interest relating to the peritonitis were the uniformity of the false membrane enveloping the bowel, the absence of fibrous adhesions to any notable extent, the laxity of the layer of connective tissue connecting the dense false membrane with the intestinal wall where the constrictions occurred, and the bridging of the tops of the constrictions by the dense false membrane of such a nature that when these bridges were cut through around the bowel the constrictions could be completely obliterated and the intestine restored to its normal length and appearance, save for the evidences of peritonitis. Most remarkable were the extent of intestine implicated in this unusual form of intestinal obstruction, all of that submitted for examination being similarly affected, the great shortening of the intestine in length resulting from the myriads of transverse constrictions, and the symmetry and regularity of the segmental constrictions entirely unlike the nicks and puckerings of the intestinal wall resulting from peritoneal adhesions.

It is evident from the description that the dense false membrane was responsible for keeping the constrictions in place. A further question is whether it was also responsible for their original production. If it be assumed that in process of organization of a progressive fibrinous exudate a false membrane, composed partly of connective tissue, was formed, that this surrounded the bowel uniformly, and was firmly adherent around the bowel at intervals, then it would seem that contraction of this false membrane in a longitudinal *direction* in consequence of the growth of cicatricial tissue would draw the intestinal wall into transverse folds at the situations where the contracting membrane is loosely attached. Mr. Brödel, who has kindly contributed the drawings (Figs. 1 and 2) accompanying this report, and who is not only an admirable artist but also a skilled anatomist, has called my attention to the possibility of explaining such a disposition of the false membrane and the situation and regularity of the constrictions by taking into account the arrangement of the intestinal vessels. On an injected and moderately distended small intestine, slight transverse furrows can be seen, each corresponding to the course of an artery which passes from the mesenteric border over the side of the intestine, these arteries alternating as they pass now to one, now to the other, side of the intestine.

As already noted the constrictions seemed to correspond to the situation of these arteries. The suggestion is advanced, therefore, that the situations where the false membrane was loosely attached and where, therefore, the constrictions occurred, correspond to these arterial furrows, and that the constrictions themselves were due to contraction in a longitudinal direction of the organizing false membrane which was firmly adherent to the intestinal wall between the furrows. The distinguishing feature of the process in accordance with this view and as seems supported by the histologic characters described, is the peculiar mode of organization of a peritoneal exudate whereby the resulting membrane is firmly adherent in places to the intestinal wall and only loosely adherent in intervening places. As already noted the fibers and fibroblasts in the organizing membrane had a prevailing direction parallel to the long axis of the intestine, and this arrangement may account for preponderance of contraction in this direction.

The mechanical explanation which is offered is advanced as an hypothesis without strong proof. Other hypotheses have suggested themselves which take into account the participation of muscular contraction during life in producing the constrictions. In the stage of chronic peritonitis represented in this case, at which the acute exudate is far removed by intervening newly formed connective tissue from the muscular coats there is no reason to assume paralysis of these coats during life.

While it is apparent that the anatomic condition in this case was in no sense intussusception, the possibility may be entertained that muscular contractions causing the bowel contractions may have been such as would initiate intussusception, but that the dense false membrane covering the intestine was an obstacle to the production of actual intussusception.

Nothing was found to indicate the cause of the peritonitis by examination of the specimen sent me.

Dr. Welch's report was written Aug. 14, 1907. Up to the present time, April 8, 1908, he has been unable to find among several of his pathologist friends of wide experience any one who had ever seen or heard of a similar case. My search of the literature has been extensive but not exhaustive and I have found no similar case. Further investigation of the literature is now being made for me and the result will be reported later.

The strange thing to me in this case is not that the bowel should be infolded, shortened and hence obstructed, as it is, by a false membrane of such character and distribution as we have here, but that we have a membrane of this character so generally and evenly disposed. Given a membrane of the quality of the one found, disposed as it was, and it seems to me that the infolding, shortening and obstruction such as found in the case reported is the natural and almost necessary result. The natural tendency to contract, which is inherent in tissue such as that composing this membrane, would, under the circumstances, be enhanced by the contraction of the longitudinal fibers of the intestine. The tendency to circular constriction would be combated by the bowel contents and the infolding of the bowel coats.

In other words, in a case such as this the contracting force of the false membrane and the longitudinal fibers of the bowel worked together without resistance, whereas the tendency to circular contraction or constriction was opposed by the bowel contents and the infolding. The outer surface of this false membrane is older and, therefore, firmer than the inner surface. This permitted the circular fibers to pull away from the false membrane, thus forming the folds, which finally filled the bowel and prevented circular constriction by the false membrane. In other words, the conditions found seem to me to illustrate the result of comparatively equal forces acting in opposite directions, the one meeting with resistance and the other with none.

DISCUSSION.

Dr. G. W. McCaskey, Fort Wayne, Ind.: It was my privilege to observe this patient for two or three weeks prior to turning him over to Dr. Porter. The case presented features of extraordinary interest. The complaint at the outset, when the patient first consulted me, was general abdominal pain and persistent green vomitus. I thought at first that I had to deal with a pyocyaneus infection. I made a culture and found an organism which corresponded morphologically to the *Bacillus pyocyaneus*. I turned it over to a bacteriologist, who said that it was the Eberth bacillus. Since then I have corresponded with the patient's family, but could get no history of anything even simulating typhoid fever.

I think that tuberculosis can be fairly excluded from the case. I had two injections of tuberculin given, first 5 mg. and then (time not permitting larger injections) 10 mg., but could not get any reaction whatever. I am sorry that I did not have the tuberculo-opsonic index taken. I did, however, have a pure culture made of the bacillus found, and the opsonic index for this organism was about 0.43. I then had an autovaccine made from this, gave several injections, bringing the opsonic index up to about 1, but, of course, the case went on just the same. We may have an organism which overcomes the blood resistance and to which the opsonic index will be low, yet that organism may possibly not have anything to do with the pathologic conditions with which we have to deal, although I think it quite possible in this case that this organism was the cause of the lesion. Whatever the infection was, it was progressive at the time of the operation. Dr. Welch says that the plastic exudate did not cover the mesenteric peritoneum, but was limited to that portion covering the intestine. This circumstance, I think, points to the conclusion that the exudate was due to an intraintestinal process, and in all probability was bacterial in character.

From the exclusion of tuberculosis and the finding of a bacillus resembling the Eberth bacillus I think that we may possibly have had to deal with an atypical chronic typhoid infection. It might be alleged in this case that we had a latent tuberculosis to deal with, and consequently no reaction was obtained to the tuberculin injections. The process was not latent, however. Dr. Welch says that there was continual new formation of plastic exudate, so that it is fair to say that the infectious agent was active at the time, and, inasmuch as the patient did not respond to 10 mg. of tuberculin, I think we can with considerable probability exclude tuberculosis as an etiologic factor in this case. At first it looked like a case of intestinal obstruction, but I used the charcoal test, and the charcoal passed through, which I think extraordinary, since Dr. Welch could scarcely introduce a probe. The case, so far as I know, is absolutely unique. A study of the gastric contents threw no light on the case. There were about 30 or 40 degrees of free hydrochloric acid. The leucocyte count was within the normal range. Although we concluded that there was plastic peritonitis, neither of us had any idea of the real pathologic findings at the autopsy.

Lip Reading for the Partially Deaf.—A society has been founded in France to teach the principles and technic of lip reading. In a communication in the *Revue de Laryngologie*, July 18, the society appeals to physicians to urge the partly deaf to learn this simple art. It relieves their ears of the strain of their efforts to hear, which fatigues or exhausts the auditory nerve and aggravates the condition of the ears, constantly working against the tendency to heal.

ROENTGENOLOGY IN NEUROLOGY.*

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PHILADELPHIA.

My object in presenting this paper is to emphasize the diagnostic value of the Roentgen rays in certain neurologic affections in which the etiologic factors constituting the nervous symptoms may be traced back to some obscure pathologic condition. Or, again, when the value of the rays has been abundantly proved as a corroborative measure in the etiology of the symptomatology of some special neurologic condition.

I do not claim that the Roentgen rays will supplant the skilled neurologist in offering a diagnosis; I repeat that this special agent acts most happily for its confirmatory value. In treating of this subject I will follow the Roentgenographic findings rather than the method usually pursued in accordance with the neurologic manifestations.

THE OSSEOUS SYSTEM.

Epiphysitis may simulate a neuritis. as the following case well illustrates: A girl, 4 years of age, complained of constant pain in the heel. The diagnosis seemed to establish the presence of irritation produced by an ill-fitting shoe. A subsequent Roentgenogram, however. showed an inflammatory condition and a partial absorption of the epiphysis of the os calcis (Fig. 1).

Osteitis and Periostitis.—Periostitis, especially in the course of a nerve or its vicinity or along the path of a neural groove, may produce pressure symptoms on the nerve, or, extending, give rise to a neuralgia or neuritis. In one case periostitis of the lower third of the radius was accountable for the excruciating suffering experienced by one of my patients. Examinations with the Roentgen rays revealed a periosteal inflammation corresponding to the area of exquisite tenderness.

Fractures and Dislocations. — Old and unreduced fractures and dislocations are often responsible for the presence of certain neurologic conditions. It should not be forgotten that fractures at the middle of the humerus may be the cause of wrist-drop.

Synostoses.—Excessive callus formation may manifest itself either by pressure on, or by inclusion of the nerve.

Supernumerary Ribs and Vertebræ.—Before the advent of the *x*-rays the diagnosis of the above conditions was beset with many difficulties and was rarely discoverable during life. It seems advisable to recall something of the symptomatology: Pain, shooting or neuralgic in character, usually first occurring in the neck and darting along the arm, not infrequently running as far as the elbow; again the pain may be felt as low down as the hand, or it may radiate to the head and chest. Muscular exertion (hard work) is prone to augment the suffering, and, indeed. many believe it to be the cause of it. These supernumerary ribs and vertebræ may closely simulate aneurism. causing aphonia, dysphagia. wasting of the muscles. etc.: but a single *x*-ray examination of the neck or spine will clearly establish a diagnosis (Fig. 2).

Osseous Tumors.—Whether these be malignant or benign. their pressure on adjacent nerves will occasion among the various other symptoms pronounced pain. etc.

Exostoses. — Exostoses. both congenital and gonorrheal, are often recognizable by means of the *x*-rays. In exostoses involving the lumbar vertebræ. pressure symptoms, whether produced in the cord itself or by the vertebræ. would be difficult or impossible of detection. except through the diagnostic agency of the *x*-rays.

Hypertrophy and Atrophy.—Unilateral enlargement of the articular surfaces of bones are frequently noticed

Fig 1.—Roentgenogram of epiphysitis of the right os calcis; 1 shows the absorbed portion of the os calcis while 4 shows the healthy remnant of that bone. F, fibula; T, tibia; A, astragalus; S, scaphoid; O. C, os calcis; C, cuboid The illustration on the left shows the normal os calcis in the patient referred to me by Dr. H Augustus Wilson.

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

in such diseases as tabes dorsalis, syringomyelia, etc., dependent on certain trophic nerve changes. Atrophy of the osseous structures is best illustrated in the bones of the upper and lower extremities, where the atrophic condition may be the result of disease, of brachial palsies, etc. In bony atrophies, contractures of the muscles occur, the bones subsequently becoming rarefied and smaller, the process of growth being delayed either unilaterally or bilaterally.

Acromegaly.—This disease is best studied by observing the osseous changes occurring in the skull, chest, hip, knee, etc. (Fig. 3). Acromegaly needs to be differentiated from osteitis deformans, congenital bony enlargements, and the so-called giant growth, common only to single members, etc. In acromegaly the long bones, i. e., the femurs, are laterally hypertrophied, the articular ends of the tibia and fibula are rarefied, while the cancellous portion of the long bones is hypertrophied. On making an *x*-ray examination the bony structures of the hands and feet at once arrest attention. The epiphyses of the phalanges are enlarged and deformed, the spots noted on the bony surfaces being osteophytes. The anterior extremities of the metatarsal bones are less opaque than in the normal state. In a sagittal view the characteristic shape of the skull, of the frontal ethmoidal and sphenoidal sinuses *point unmistakably to the diagnosis;* the sella turcica is widened and the occipital protuberance is enlarged and rarefied.

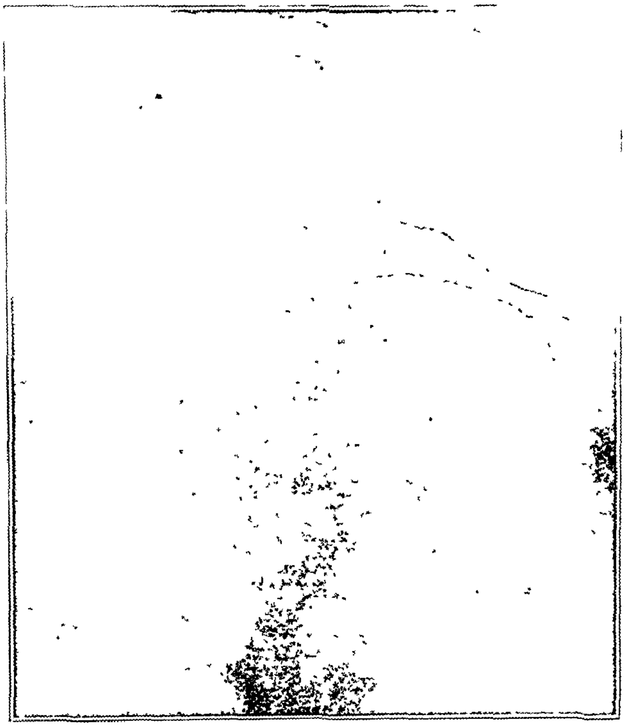

Fig. 2.—Roentgenogram of a supernumerary right cervical rib. That the delicate shadows in the original Roentgenogram may not be lost in reproduction, the supernumerary rib has been lightly outlined. Patient of Dr. Solis Cohen, a girl, aged 17, showed a slight prominence over the right supraclavicular space. She complained of a radiating pain extending along the left side of the neck. The Roentgenogram shows the additional rib springing between the interval of the sixth and seventh cervical ribs. This supernumerary rib is about 3 inches long, one portion of 2 inches being separated from the remaining portion by a slight interval.

Cretinism.—It has long been known that an intimate relationship exists between pathologic changes in the thyroid gland *and cretinism. In the latter disease there* occurs a premature union of the sutures and the epiphyses, causing the small length and peculiar contour of the skull. *It has been shown that there is a variable time for the growth of bone and the union of cartilage.* The arrest of bony growth is variable; this may lead to *alteration taking place in special cartilages, which is* frequently designated as chondro-dystrophy of thyropriva.

In cretinism in young subjects the x-rays will readily reveal a short diaphysis and the absence of osseous articulating surfaces; instead we see the space between the *diaphysis and the epiphysis to be clear and transparent* to the rays, proving that the growth of the epiphysis has been arrested and has remained cartilaginous.

Not only are the centers of ossification delayed, but also the ossification of the epiphyses and the juxta-epiphyseal cartilages may persist for a long time, thirty or forty years, or even longer, and often never unite. By the administration of thyroid extract the growth of bone and the process of ossification have been hastened, proving the true pathogenesis of cretinism, as I have *observed skiagraphically.*

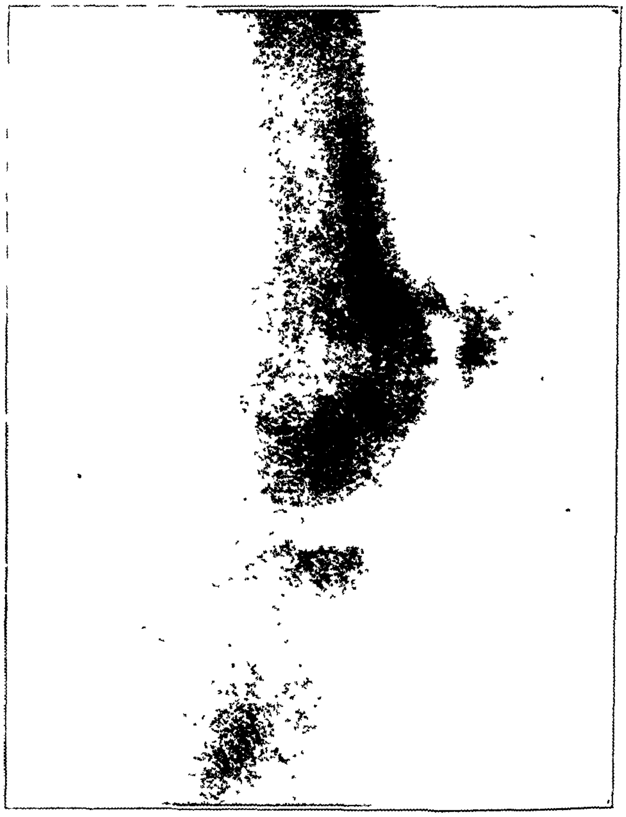

Fig. 3.—Roentgenogram of a knee joint of a patient with acromegaly. The case was referred to the author by Dr. Dercum and the Roentgenograms of the skull, chest and hip show, as well as does the knee joint, the characteristic bony changes. The above illustration shows osteoporosis and alterations in the articular ends of the bones, hypertrophy of the cancellous portion of the femur, etc.

ARTICULAR SYSTEM.

The value of the *x*-rays is well attested in differentiating various arthritic conditions. Thus we can readily determine whether the changes present are: (1) Intra-articular, peri-articular, intra- or extra-capsular, tuberculous, simple or infectious, hypertrophic or atrophic, etc. (2) *The existence of arthropathies* (nervous in origin) such as tabes, [illegible] matoid arthritis, arthralgias of [illegible] ([illegible]'s joints) traumatic neuroses, neurasthenia and psychasthenia. (The painful joints of psychoneurotics.) The knee joint is most frequently affected (gonalgia), the shoulder joint quite frequently so, while the talocrural and the intertarsal joints are only occasionally thus affected. Not infrequently the cervical portion of the spinal column may be the symptomatic region when the condition may be confused with that of cervical caries.

The diagnosis of arthropathies by the Roentgen rays obviates the former error of believing these changes, in so many instances, to be illustrations of neurotic joints; nevertheless, there is still danger of looking on the psychoneurotic joint as an organic disorder, and even today it is the skilled neurologist whose interference is so often necessary to prevent the surgeon employing the knife, saw or cast on these troublesome cases in the neurologist's category. Let me casually remark that the most brilliant studies and results bearing on the relation between diseases of the joints and of the nervous system had its inception and elaborate development in America.

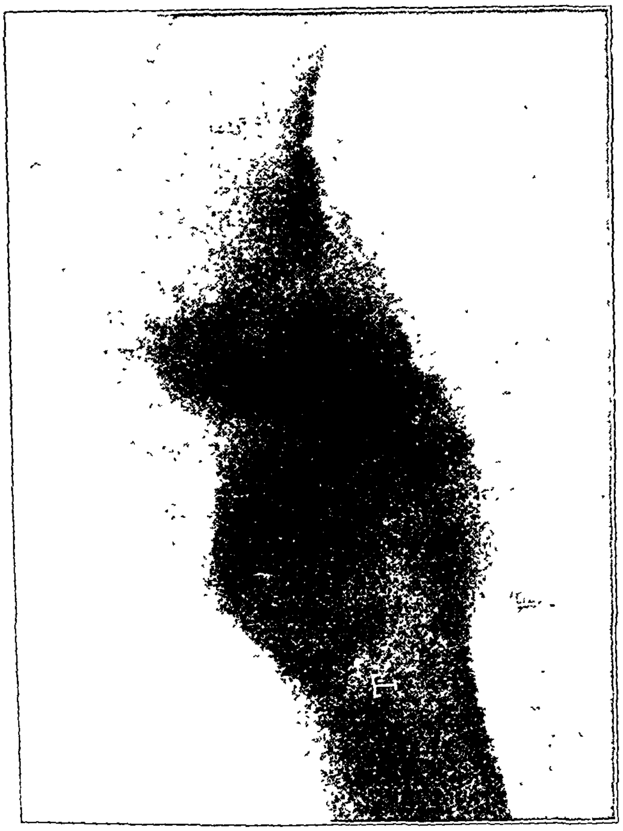

Fig. 4—Roentgenogram of an advanced type of tabetic arthropathy of the left knee joint P, the patella is adherent to F, the femur. The letters F and T accompanied by arrows, indicate bony excrescences of the femur and tibia.

Tabetic Arthropathies.—Ever since Charcot's brilliant researches on joint lesions occurring in tabes (1868) the study has received a new impetus. And while the clinical picture of the tabetic arthropathies is a familiar one, nevertheless the many obstacles arising not infrequently make a differential diagnosis a matter of difficult accomplishment. In the early stages the Roentgenogram will show a hazy joint due to fluid in the capsule of the joint, or to the initial stages of a gonorrheal gonitis or a tuberculous arthritis, unless these facts are cleared up by the history and clinical symptoms.

In mild cases there may be distention of the capsule of the joint (especially well shown in the knee joint), with very little change in the peri-articular ligaments. In the advanced cases there may be discernible certain nodules of bone or cartilage (semi-opaque masses). In the severer types of arthropathies these fibrous structures become thinned and fused with neighboring structures, forming general fibrous masses in which bony and cartilaginous nodules frequently appear (Fig. 4).

Tabes Dorsalis.—In tabes dorsalis there occurs an osteoporosis and finally disappearance of the articular extremities; at this time there is evidenced the presence of exuberant osseous vegetations forming osteophytes and likewise calcareous deposits on the articulating surfaces, on the capsule of the joint, and even in the neighboring muscles and ligaments. The destructive process consists of cartilage disappearance, while the osseous structure rarefies. This invisible rarefaction is due to the superimposition of the calcareous deposit in the periarticular space.

SYRINGOMYELIA.

The joint affections in syringomyelia resemble very closely those that occur in tabes, but I have noticed that the upper extremity is more frequently affected: the shoulder, the elbow and especially the wrist; on the contrary, in tabes the lower extremity is mostly affected.

In syringomyelia the pathologic process in the development of arthropathies is slightly different. In advanced cases we notice hypertrophic enlargement of the extremities of the bones entering into the formation of the joint, which is usually a striking feature. The capsule is thickened, often ossified in places, and erosion of the cartilage or changes in the synovial membrane takes place. In other instances, instead of hypertrophy, atrophy is the result, and the bone is absorbed, spontaneous dislocation is noticed and exostoses are developed around the joint.

In tabes we but slightly observe exuberant ossification, the lesions will end in a complete destruction of the articulation, and in the disappearance of the osseous extremities. In shoulder affection the humeral head is deformed and dislocated and gradually absorbed. Metacarpal bones and the phalanges show clear disseminated spots.

Arthritis Deformans.—From tabetic arthropathies we differentiate arthritis deformans as follows: Arthritis deformans affects the small joints (rarely the knee), it exhibits hypertrophic varieties, the dislocation occurring is lateral, the osteophytes are sharp, pointed or curved, the extremities are absorbed and pointed, consequently displacement and overriding are very prone to occur.

IN MISCELLANEOUS CONDITIONS.

Brain Tumors, Clots and Cysts.—Roentgen ray diagnoses of nervous affections in the softer tissues are not so satisfactory and are very difficult of accomplisiment for the following reasons:

1. Soft tissue tumors do not cast very dense shadows (cysts containing fluid often throw denser shadows).

2. Tumors, cysts, etc., are situated within thick bony structures as the skull and vertebral column.

3. The new growth may be far from the plate.

Tumors of the spinal cord are difficult to reproduce on the photographic plate because of the irregularity and thickness of the vertebræ and of the irregularity of the processes of the body of the vertebræ. Of course, tumors of bony *growth* are often noticeable on the plate. The portion of the cord between the plates of cartilage being transparent, the shadow of the cord may be visible on the plate; this is especially true in the lumbar region.

Pachymeningitis.—Pachymeningitis may show a slightly increased shadow less dense than the bones *of* the skull.

Aneurism.—I have frequently diagnosed, skiagraphically, paralysis of the recurrent laryngeal nerve which was causing aphagia or aphonia, in no way indicating the presence of an aortic aneurism.

Mediastinal Tumors.—Mediastinal tumors may often produce similar troubles in the larynx, the laryngoscope failing to reveal the cause of the condition. In these cases the *Roentgen* rays will readily establish the diagnosis.

Foreign Bodies.—The presence of foreign bodies may produce various neurologic disturbances. Their detection and localization will assist the surgeon in their removal, thus revealing to the neurologist the true cause of the disturbance. The presence of a foreign body may cause most serious trouble as the result of pressure symptoms.

In Dentistry.—Many dental affections are responsible for manifold neurologic symptoms, which are now readily diagnosticated by means of the *x*-rays. Unerupted teeth, malpositions, the presence of *a* fragment of *broken* instrument, etc. Not infrequently these conditions produce headache, neuralgias, epileptic seizures, etc.

THERAPEUTIC VALUE

Microscopic examination of irradiated tissues has amply proved that the Roentgen rays exert a *marked* and peculiar action on those areas with which they are brought in contact. In neuralgias, whether of the acute or chronic type, marked alleviation of the suffering and of the lengthening of the intervals between the seizures has been *noted*. In some cases permanent cures have been attained. The analgesic action of the *x*-rays is now an indisputable fact.

On neoplasms the action of the x-rays has been proved by the clinical and microscopic changes occurring in the growth. Pressure exerted by the growths may assert itself as pain, neuralgia or some other neural manifestation. The *irradiation* of these neoplasms will not infrequently result in the *absorption* or lessening of the size of the growth, with relief of the pressure symptoms and a material improvement in the patient's condition. Roentgenology in neurology is still in its infancy. The future alone can reveal the possibilities of the Roentgen rays in the domain of neurologic diagnosis *and* therapeutics. With advances in the apparatus and increased skill on the part of the operator, many obscure and possibly unknown conditions may yet unfold themselves as pathologic states, heretofore unrecognizable.

SUMMARY

1. The Roentgen rays have been invaluable in detecting the etiology of nervous manifestations the result of disease of the osseous system. The rays are not a substitute for, but only an adjunct to, the neurologist's *investigations*.

2. Changes occurring in the osseous system (resulting in neurologic symptoms) are readily detected by the rays.

3. The differential diagnosis between epiphysitis and *neuritis is readily accomplished.*

4. Osteitis and periostitis are readily differentiated and diagnosed by this agent.

5. Neurologic conditions dependent on old and unreduced fractures and dislocations, and pressure symptoms from excessive callus formation, are now *readily diagnosticated.*

6. Supernumerary ribs and vertebræ formerly so rarely diagnosed during life are easy of detection by the *x*-rays, as is their differentiation from aneurism.

7. Osseous tumors *and* exostoses are easily discernible. Troublesome pressure symptoms are thus readily accounted for.

8. Osseous atrophy and hypertrophy are recognizable by the x-rays, and their study is important because of the *diseases with which these conditions are associated.*

9. The osseous *changes occurring in acromegaly* and cretinism are well *brought* out skiagraphically and are easy of differentiation.

10. The value of the Roentgen rays is of paramount importance in determining changes occurring in the articular system, whether due to *pathologic* states in, near or around a joint, as in the study of arthropathies, spinal-joint affections, etc.

11. The arthropathies of the tabes and dementia paralytica form an interesting study from a Roentgen-ray viewpoint. The early, mild, advanced and severe types of arthropathies present varying Roentgenograms.

12. The differential diagnosis between tabes dorsalis and arthritis deformans presents a widely contrasting picture by the use of the rays.

13. Brain tumors, clots and cysts are more difficult of interpretation. Soft tissues do not cast shadows so *dense as do the harder tissues; the growth is within a* bony *cage and may be far from the plate.*

14. Similarity of symptoms arising from aneurisms and mediastinal tumors are frequently differentiated by a skiagram.

15. The skiagraphic detection, localization and extraction of foreign bodies will frequently explain existing neurologic manifestations.

16. Dental studies have greatly progressed since the introduction of the x-rays. The headaches, neuralgias, etc., so often dependent on unerupted teeth, malpositions, etc., are now readily detected and remedied.

17. The therapeutic action of the Roentgen rays is evidenced in their *analgesic* action, in their palliative and often curative effects in neuralgia, and in their causing an absorption or decrease in size of various growths and neoplasms. Painful pressure symptoms are thus mitigated.

18. Future research, increased skill in manipulation, and greater improvements in the apparatus employed, *may* open up new paths *in neurologic* studies *and* investigations.

DISCUSSION

Dr. George A. Moleen, Denver: I believe that the greatest value of the Roentgen ray in nerve work lies in the revealing of the impingement on nerves by exostoses and other deformities. The *x*-ray is very valuable in the depiction of brain tumors which are localized clinically, but I find that I can not rely absolutely on the shadow in deep-seated tumors. If a tumor happens to be deep-seated the shadow will be flared out and not sharp in outline. If the tumor is near the surface, however the outlines are sharp and the *x* ray evidence is more reliable This applies more often to tumors of the cerebellum Of course, if the tumor happens to be soft in character the shadow will not be so dense I met a curious case of a cyst which I had localized in the superior parietal convolution of the right side I had some doubt about the location, and had a skiagram taken, but strangely enough the shadow covered almost the entire side of the skull I determined, however, after careful clinical study of the case, that I must be correct in my original diagnosis, and therefore the skull was opened, disclosing first, a small cyst, then a dilated lateral ventricle five and one quarter inches long and four and one half inches in width, filled with a straw colored fluid resembling cerebrospinal fluid Why the skiagram reproduced the shadow I don't know, but sometimes, I presume, fluids by reason of refraction, will give shadows which may be misleading I think that the value of the *x* ray for the diagnosis of nervous diseases in exostoses and other deformities causing nerve impingement, and also especially in localizing brain tumors which are not too deep seated, can not be over estimated

Dr S J Wright, Akron The medical profession is not always ready to receive new discoveries Roentgen was very adroit in keeping his discovery absolutely secret for several months until he was prepared to exhibit to the medical profession skiagraphs Dr Robert Morris of New York City, at the Ohio State Medical meeting at Columbus, presented his views on obliterative appendicitis, described by Nicholas Senn of revered memory, and defended surgeons who had been criticized for operating in this condition Dr Morris discovered the fact that while obliterative appendicitis destroys the mucous membrane of the appendix the muscular layer and peritoneal coat and leave scar tissue, it does not destroy the nerves, but is likely to pinch them This condition is an indication for operation or treatment to relieve the nerves, which can readily be done Dr Morris says that ablation of the scar tissue removes all symptoms I had such a case, one of a man about 40, who had repeated attacks of catarrhal appendicitis He had almost constant pain in the appendiceal region and distention with gas, and a classical history of catarrhal appendicitis at intervals of weeks or months for several years I told the patient that he probably had no ordinary appendicitis and no appendix, but that there might be scar tissue pinching the nerves I used an *x* ray, released the nerves, and a complete recovery followed, and I hold that every surgeon who has been criticized for removing the fibrous condition resulting from the obliteration of an appendix can defend himself in the absence of pus or infection on these grounds

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EXPERIMENTS ON AN ASH-FREE DIET AND SALT METABOLISM

WITH ESPECIAL REFERENCE TO EDEMA IN DIABETES MELLITUS

ELLIOTT P JOSLIN, M D

AND

HARRY W GOODALL, M D

BOSTON

The rôle played by the inorganic salts in diabetes mellitus has not attracted much attention It was therefore a matter of considerable interest when Taylor[1] noted the presence of acetone and diacetic acid in the urine and acetone in the breath while he was living on an ash-free diet The question was thus raised whether the withdrawal of salts from the diet might lead as a rule to the production of an acidosis in a healthy individual or accentuate an acidosis already existing in a diabetic patient. We have investigated the former of these points during the last year and have accumulated some information bearing on the latter point.

Two healthy students were placed on Taylor's ash-free diet, consisting of the whites of eighteen eggs, 200 gm. sugar and 120 gm. olive oil After twelve and nine days respectively the chlorin excretion in the urine fell to 0 17 gm. Tests for acetone and diacetic acid in the urine were invariably negative The results of these experiments showed no marked changes in metabolism, but rather represented the withdrawal of accessory salts from the body They confirmed the views of earlier writers that it is practically impossible to diminish the chlorin of the body by more than 10 to 14 per cent and demonstrated that the loss of water was proportionate to this No remarkable symptoms appeared and those that occurred were less than would be expected from such a diet, even though it contained a normal quantity of salts They gave no support to the view that the withdrawal of salts from the diet gives rise to an acidosis of the acetone type A full account of these experiments will be found elsewhere.[2]

Evidence against the accentuation of an acidosis by the withdrawal of salt (not salts) was afforded by observations on a case of diabetes This patient showed on the first few days of observation a positive carbohydrate balance of 60 gm During a febrile attack this positive carbohydrate balance changed to a minus carbohydrate balance of the severest degree, not only all the carbohyrate in the diet appearing in the urine but nearly all the carbohydrate as well which theoretically could be formed from the protein metabolized in the body On account of the severity of the case and the febrile condition of the patient the diet was of very simple character, and accidentally contained a very small quantity of salt The chlorin was estimated repeatedly during the course of the case and on the fifteenth day was found to amount to but 1 7 gm in twenty-four hours Two days later it fell to 0 63 gm and on the following day was 0 64 gm Neither the symptoms nor the degree of acidosis, as determined by the ammonia, gave evidence of increased acid poisoning despite this low chlorin We would not attach too much importance to these results, because the excretion of chlorin may be so variable a factor when there exists, as in this case, trouble with the kidneys Details of this case are given in the article above mentioned In Case 135, later described in this present paper diabetic coma appeared when the salt was lowered in the diet, but the connection between the two phenomena would appear to be indirect, though by no means unimportant. Before entering further on the discussion of salt in diabetes, however, we wish to refer to the occurrence of edema in this disease

The occurrence of edema in diabetes mellitus finds scant mention in the literature Naunyn[3] says that edema is not a seldom occurrence in cachectic patients with severe diabetes, and is often an early symptom with patients having *arteriosclerosis and myocardial degeneration*, with or without the presence of albumin It is occasionally present without cause He mentions one case in which the edema disappeared as the patient became sugar-free on a diet containing 60 to 100 gm bread It is his impression (p 261) that arteriosclerotic patients with diabetes mellitus seldom succumb to progressive dropsy, and very seldom present the picture of venous cardiac failure with its signs of passive congestion—persistent dyspnea, marked cyanosis, anasarca and fluid in the cavities of the body.

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* Read in the Section on Practice of Medicine of the American Medical Association at the Fifty ninth Annual Session, held at Chicago June 1908

[1] Taylor Studies on an Ash-Free Diet Univ Calif Pub Pathology 1904 i, No 7, p 71

[2] Arch Int Med July 1908 i 615

[3] Naunyn B Diabetes Mellitus ed 2, 1906

Von Noorden[4] writes: "In a few cases the patients have developed edema during the oat treatment, whereas otherwise, as we all know, the diabetics rarely exhibit edema." In another place[5] he makes this same statement apply to diabetics, even in the presence of valvular disease. Williamson[6] has observed anasarca in more than 5 per cent. of his diabetic patients. He records one case in particular in which it was not associated with albumin or cardiac or vascular trouble and cites Frerichs as having noted the same phenomenon in twenty-five out of four hundred cases. Roberts (cited by Williamson, p. 22) attributed the slight pitting over the tibiæ to the atonic state of the subcutaneous tissue rather than to true edema; but Ebstein[7] ascribes it in a case of his own to the influence of the vascular nervous system.

Seven of our own diabetic patients have shown edema of greater or less extent, although at the time they presented very slight or no evidence whatsoever of disease of the kidneys or heart. In only two instances did the arteries present even moderate sclerosis. The cases were all of the severe type of diabetes. This was shown by the marked acidosis, minus carbohydrate balance, and the loss of forty to forty-six pounds during the previous course of the disease. Four of these patients have since died in typical diabetic coma; one of the remaining showed 7 gm. ammonia in the urine for twenty-four hours, and another 3.7 gm. ammonia. The edema in these patients occurred during a period in which there was a considerable restriction of the diet with a consequent fall in the excretion of sugar. Under such circumstances a simultaneous rise in the degree of acidosis was to be expected and such in fact took place. Along with the restriction of the diet sodium bicarbonate was administered either for the first time or in doses larger than those previously given. None of the patients died for some months after the edema was observed, although two showed distinct, clinical, premonitory signs of coma at this time. A brief summary of the various cases follows:

Case 40.—The patient was a woman, aged 57, whose weight had fallen from a maximum of 152 pounds to 92 pounds. She then gained 21 pounds in twenty days in the spring of 1904 and presented edema. During this period the carbohydrates were restricted so that the excretion of sugar fell from a total of 141 gm. to 104 gm. There was a minus carbohydrate balance and diacetic acid was present in excessive amount. Sodium bicarbonate 12 or more gm. daily. There was a slight trace of albumin in the urine and occasionally casts. Premonitory signs of coma were present throughout, but death in coma did not take place until two months later.

Case 79.—The patient was a man, aged 43, whose weight had fallen from 180 pounds to 139 pounds. He gained 5½ pounds in ten days in September, 1904, and edema appeared. Five days before the first weight was taken there were 253 gm. sugar in the urine, but on the last days the sugar had fallen to 36 gm. There was a minus carbohydrate balance which persisted except for a few days later when the patient became sugar-free temporarily on a protein fat diet and the employment of vegetable days. Diacetic acid was absent at first, but soon appeared with the restriction of carbohydrates. Sodium bicarbonate was probably given in doses of 4 to 8 gm. The urine showed no casts and only the merest trace of albumin. One year and a half later, during a period of strict dieting and increase of alkali, the patient told me that his weight rose in the course of a few days 25 to 30 pounds and that there was general dropsy. The diacetic acid was then present in the urine in excessive quantities. Death occurred about six months later in coma.

Case 101.—The patient was a man, aged 57 years, whose weight had fallen from 175 pounds to 132 pounds. He gained 13 pounds in twenty-two days in the autumn of 1905. Edema was marked at the time of maximum weight, but was not present before. In this interval the sugar in the urine decreased from 154 to 26 gm., and during the middle portion of the period there was a great increase in diacetic acid, and a minus carbohydrate balance. Sodium bicarbonate was given 8 to 12 gm. daily. The urine was usually free from casts and contained only a slight trace of albumin. Death occurred in coma a year and a half later.

Case 132.—The patient was a man, aged 42, whose weight had fallen from 182 pounds to 128 pounds. He gained 4¾ pounds in ten days, November, 1907, only to lose the same in the following twenty-four hours. Edema was slight. During this period the sugar in the urine fell from 220 gm. to 60 gm. and the carbohydrates in the diet were lowered in about the same proportion. On admission the diacetic acid was recorded with a single + sign, but after ten days with ++++ signs. There was a minus carbohydrate balance. No sodium bicarbonate was given the first five days, but the latter five days it averaged 18 gm. There was a very slight trace of albumin and no casts.

Case 164.—The patient was a man, aged 43, whose weight had fallen from 198 pounds to 132 pounds. He gained 11½ pounds in nine days in September, 1908, showing much edema. During this time the sugar in the urine fell from 180 gm. to 137 gm. and there was a corresponding lowering of carbohydrates. Diacetic acid was recorded as ++ at the start but on the last day was ++++. There was a minus carbohydrate balance. Sodium bicarbonate was given, 20 gm. daily. There was the merest trace of albumin in the urine and no casts.

Case 147.—The patient was a man, aged 42, whose weight had fallen from 185 pounds to 151 pounds. He gained 12 pounds in twelve days in June, 1907, and edema appeared. During this time the sugar in the urine fell from 215 gm. to 51 gm. on the eleventh day, and diacetic acid increased from ++ to ++++. There was a minus carbohydrate balance. Sodium bicarbonate was given, 12 gm. daily. The urine showed the merest trace of albumin and no casts. Thirteen months later the patient returned to the hospital in a much worse condition. For convenience the case will be discussed later, but the data are recorded here.

TABLE 1.—Case 147.

	Urine.			Diet.			
Date 1908.	Diacetic acid.	NH_3 gm.	Total Sugar gm.	Carb. gm.	$NaHCO_3$ gm.	Weight lbs.	Remarks.
2/25	+++	6	300	...	20	....	
2/27	++++	5	118	92	20	127⅜	
2/28	++++	...	96	92	20	127⅞	Nausea, vomiting and threatening coma.
2/29	++++	...	113	68	24	127	
3/1	++++	...	149	123	24	122⅝	-
3/2	++++	...	136	108	20	121⅜	
3/3	++++	...	131	103	20	124⅞	
3/4	++++	...	181	110	20	128	
3/5	++++	...	126	86	20	132⅝	Salt restricted.
3/6	++++	...	141	86	20	133⅝	
3/7	++++	5.6	166	...	20	133⅞	Patient allowed to visit a friend.
3/8	+++	7	229	...	20	133	

Case 162.—The patient was a man, aged 30, whose weight had fallen from 154 to 113 pounds. He gained 8½ pounds in fourteen days in June, 1907, and edema appeared. The sugar in the urine amounted to 345 gm. about ten days previously, but was much less during the interval between the two dates on which he was weighed. Ammonia was present, 5 gm. Sodium bicarbonate was given, 16 gm. daily. The urine contained a slight trace of albumin and a moderate number

of casts. Death occurred in coma five and one-half months later.

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[4] von Noorden, Carl: Diabetes Mellitus. E. B. Treat & Co., 1905, p. 193.

[5] Die Zuckerkrankheit, ed. 2, 1907, p. 169.

[6] Diabetes Mellitus and Its Treatment, 1898, p. 227.

[7] Diabetes Mellitus, Unterleibskoliken und Oedeme in ihren Wechselbeziehungen, Ztschr. f. klin. Med., 1900, xl., 181.

The factors which appeared most intimately connected with the development of edema in our seven cases were two—the restriction of carbohydrates and the administration of sodium bicarbonate. In our experience, however, the restriction of carbohydrates has never caused the appearance of edema in a mild case of diabetes. We have had an excellent opportunity to collect evidence on this point, because it has been our custom to weigh patients daily during the early period of observation, which is usually a period of restriction of diet as well. If the edema is dependent on restriction of carbohydrates, this must apply only to those cases like ours, which are of a severe type. To this aspect of the question we will later return.

The other factor — sodium bicarbonate — was considered by several of the patients themselves to be the cause of the edema, and for a time this seemed to us to be the most probable explanation. The first observation which threw doubt on this explanation occurred in the course of the treatment of Case 132. This patient gained, between November 14 and November 16 5¼ pounds, although no sodium bicarbonate was administered. During this time the diet was restricted from 215 gm. carbohydrate to 130 gm. Between Nov. 19, 1907, and Dec. 1, 1907, an average of 22 gm. of sodium bicarbonate was given daily, but the weight rose from only 129 to 129¾ pounds.

TABLE 2.—CASE 135.

	Intake.						Urine.									
Date. 1908.	$NaHCO_3$ gm.	Carb. gm.	Protein gm.	Fat gm.	Alcohol gm.	Liquids c.c.	Vol. c.c.	N gm.	NH_3 gm.	Acetone and diacetic acid gm.	β-oxy. acid gm.	P_2O_5 gm.	Cl. gm.	Sugar gm.	Weight lbs.
1/26	0	135	110	185	..	3500	3720	21.8	4.2	7.9	29	4.4	8.2	160	88¼
1/27	0	135	110	185	..	3500	3940	19.6	4.3	7.8	29	4.5	6.3	165	89¼
1/28	0	135	110	185	..	3500	3210	20.5	4.4	7.3	24	4.6	5.9	160	86¾
1/29	0	135	90	155	..	3500	3210	19.2	4.1	7.3	26	4.2	4.8	163	85¾
1/30	25	135	70	185	..	3500	3190	16.3	3.5	8.7	33	4.1	1.6	146	85
1/31	25	120	60	95	23	5370	4600	19.1	4.3	12.6	51	5.1	2.3	146	83¼
2/1	37	130	100	130	45	5250	4050	18.7	3.3	10.7	39	4.3	2.0	137	82¼
2/2	52	70	60	95	45	5370	3510	16.0	3.5	10.2	37	3.9	2.1	121	81¾
2/3	..	15	15	30	45	800	360	15.0	...	....	..	...	...	86	....

A further opportunity was afforded of determining the influence of sodium bicarbonate in the production of edema by a study of the following case:

CASE 135.—The patient was a male, 34 years of age, who entered the hospital in January, 1908, in a most pitiable and cachectic condition, his weight having fallen from 138 to 88 pounds. He had been under our observation for nearly a year and a half, having developed diabetes three and one-half years before we first saw him. For a short time previous to admission he had given up on his own account the use of sodium bicarbonate, because he believed it was the cause of his edema. The diet on entrance consisted of milk, 1 pint, cream, ½ pint, fresh butter, 2 ounces, oatmeal (cooked), 1 gill, 4 eggs, meat, 10 ounces, potatoes, 8 ounces, 6 ounces of (cabbage, spinach, lettuce, tomatoes), apple, 4 ounces, orange, 4 ounces, olive oil, 1 ounce—without the addition of salt. It contained approximately 135 gm. carbohydrate, 110 gm. protein and 185 gm. fat. For the first four days no alkali was given. Twenty-five grams of sodium bicarbonate were then added to the diet. This was a little more than the quantity which the patient had taken intermittently for the two years up to the time he had omitted it before coming into the hospital. Two days after he began to take the alkali symptoms of coma became marked, and, despite the fact that the sodium bicarbonate was increased in quantity, death occurred two days later.

Not only was no edema to be noticed during the period of the administration of the alkali, but the weight, which had fallen 2½ pounds during the first four days after entrance, continued to fall, but at a much more rapid rate, namely, 3¼ pounds in the second four days. The quantity of carbohydrate was not reduced in the diet, but the amount of fats and protein was lowered because of the inability of the patient to take so much food. In the alkali period the quantity of liquids ingested was about 50 per cent. greater than during the first period, and exceeded the quantity excreted in the urine by 25 per cent. This was in contrast to the first period, when the quantity of liquids ingested and the volume of urine voided were approximately the same. Plenty of liquid was available, therefore, for the production of edema, yet it did not occur in the presence of sodium bicarbonate and a failing heart. The analytical data are presented in Table 2.

One of the points of interest in Table 2, and one which may have a bearing on the question of edema, is furnished by the chlorin excretion. This changed markedly as soon as sodium bicarbonate was administered, falling from an average of 6.3 gm. daily during the first period to 2 gm. daily in the second period. The constancy in the excretion of nitrogen and phosphates up to the alkali period was notable. As often occurs, the ammonia did not increase even in the presence of coma. The giving of 25 gm. sodium bicarbonate was certainly not sufficient reason for the lack of rise of ammonia with the need of the body for so much more alkali. The acetone and diacetic acid and the β-oxybutyric acid showed well the increasing acidosis, but it is worthy of note that the *increase did not take place at first*, although there was undoubtedly a restriction of 100 to 200 gm. of carbohydrates as compared with the diet before entrance. The analyses of the β-oxybutyric acid were made by the modification of Magnus-Levy's method recently suggested by Mr. Black. Duplicate analyses presented most satisfactory results, and we can not too highly recommend Mr. Black's procedure, which shortens the time required for the analysis of β-oxybutyric acid to a few hours.

The observations on the two cases above reported are distinctly against the view that sodium bicarbonate had anything to do with the production of edema in our cases.

The study of the action of sodium bicarbonate in a diabetic individual is difficult because the results of its administration may be so diverse. For example, we know that the administration of sodium bicarbonate to a severe diabetic leads to an increased excretion of β-oxybutyric acid in the form of its salt. This may not be an indifferent matter. Desgrez and Saggio[8] have shown that diacetic acid and more especially β-oxybutyric acid are distinctly harmful to the kidneys. It is therefore readily conceivable that the extra amount of these acids excreted following the use of sodium bicarbonate in severe cases of diabetes may so injure the kidney as to prevent its performing its ordinary functions, such as, for example, the excretion of salt. A retention of salt would of course in turn lead to a retention of water with an increase in body weight. The administration of sodium bicarbonate may on the other hand have a totally different effect, since it is one of the best methods for removing chlorin and with it water from the body. In this event sodium bicarbonate would lower rather than increase body weight. Both of these actions might go on simultaneously. In that event it would depend on the quantity of salt in the body and the degree of injury to the kidneys whether the gain or loss of weight takes place. Still another variable enters into the problem, for both Magnus-Levy and we have observed in the study of patients with fatal diabetic coma that considerable quanitities of chlorin may be excreted by the intestines.

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[8] Sur la nocivité des composés acétoniques. Compt. rend. Soc. de biol., 1907, lxiii, 288. Reviewed in Centralbl. f. Stoffwechsel- u. Verdauungskr., 1908.

In order further to simplify the question of the etiology of edema in diabetes we determined to note the effect of the withdrawal and addition of salt to the diet of a diabetic patient. A favorable opportunity was afforded by observation of Case 135, above mentioned. The diet, which was constant, contained a comparatively small quantity of chlorin, though an amount amply sufficient for the usual needs of the body. During the first four days of the experiment the chlorin in the urine gradually decreased. This was presumably due to the small amount of chlorin in the diet as compared with that before entrance. The fall in chlorin excretion became much more rapid as soon as alkali was begun. The weights were parallel to the chlorin, falling slowly at first and then rapidly. Edema did not occur in the presence of a restriction of salt although the condition previously found favorable to its appearance—a marked diminution in the carbohydrate intake—was present. The explanation would thus apparently lie in the restriction of the salt in the diet. But the case suggests many interesting questions.

The patient remained in nearly as good condition during the first four days in the hospital as at entrance, but coincident with the administration of sodium bicarbonate, coincident with the fall of chlorin to a daily average of 2 gm., and coincident with the increasing loss of body weight, coma appeared. Might not these four factors be brought into connection? The sodium bicarbonate accelerated the removal of the accessory chlorin and water from the body, and it set free for elimination increased quantities of β-oxybutyric acid. Was not the percentage of this acid thereby increased in the remaining body fluids? In support of this view there are data available which show that the blood of diabetic patients in coma is more concentrated than normal. A diabetic patient on the verge of coma is well known to be in unstable equilibrium. At such a time the removal of nearly all the accessory water from the body must be of serious import.

Suggestive evidence that salt plays an important rôle in the production of edema in severe diabetes was given by Case 147 already reported. An examination of the data displayed in the table of that case will show that when this patient was on the verge of coma, the weight was at the lowest point. On this day in addition to the administration of considerable doses of sodium bicarbonate, as much as this particular patient's stomach would bear, we gave salt solution enemata, and he subsequently took a little more salt in the diet than is the rule. Coincident with his improvement, as was to be expected, there was a gain in weight, but this was so rapid that it is impossible to explain it otherwise than by the retention of water, which was later found by the appearance of edema. The gain in weight ceased when salt in his diet was restricted, although this was not done until he had replaced most of the floating water of the body. The improvement of the patient with comparatively small doses of sodium bicarbonate was unexpected and it suggested that the salt simultaneously administered might have had some contributory effect. It will be remembered in Magnus-Levy's remarkable case (Case 6) recovery from actual coma took place with the administration of large doses of sodium bicarbonate, some of which we infer was dissolved in normal salt solution. It is of interest too that in his case general dropsy, including ascites, developed. There was, however, albumin in the urine of his patient.

If the withdrawal of some of the salt from the diet of a severe case of diabetes prevents the occurrence of edema when the carbohydrates are being restricted, the administration of salt should lead to salt retention and gain in weight. We, therefore, gave salt in doses of 4 gm. twice daily to eight patients with diabetes. The weights of the patients were taken in the same clotnes at the same hour (as a rule shortly before a meal) and after urination. For the sake of control the patients were weighed for several days preceding and following the salt period. The data are presented in the form of a table (Table 3). Two of the patients (11 and 112) presented marked acidosis, and it is at once evident that these were the only cases showing a material gain in weight in the salt period. They are patients who clinically correspond exactly with those in whom we previously had noted edema. Patient 105 was a boy

TABLE 3.—ADMINISTRATION OF SALT TO PATIENTS WITH DIABETES.

	Case 11.	Case 112.	Case 155.	Case 8.	Case 105.	Case 186.	Case 194.	Case 163.
Age	49	50	46	69	18	60	13	43
Carb bal.	—	—60	+40	+35	—	St.+	+20	+87
NH_3	3.3 gm.	3.7 gm.	......	......	......	......	1.5 gm.	......
Diacetic acid	++	++	0	0	++++	+	0	0
Weight (lbs.) during Control Period:								
Day 1	147	193	.....	153	111¼	.....	.....	.....
2	147	193	173½	152 9/16	112¾	176¾	110¼	170¼
3	145	192½	173½	152⅝	111¾	176¾	111	168½
4	145	193	173½	153	111¼	176¼	110	168¾
Weight (lbs.) during Salt Period:								
Day 5	147½	196¼	173½	153	110	176¼	111¼	169
6	149	194	.....	153	110¾	178¼	112⅜	169⅜
7	148	196¼	173¾	152½	111	.....	112¼	169⅞
8	148	197	174½	.....	111⅔	177¾	112¼	170
Weight (lbs.) during Second Control Period:								
Day 9	.....	195½	175	152 1/16	112¼	181	111¼	169⅝
10	148	194	173½	151⅞	112¾	180	111⅛	169
11	149	193½	173	151½	112½	179	111	169⅞
12	149	.....	173	152⅛	112½	179½	110½	169¼

with advanced diabetes of the severest type. He had not, however, lived on a very restricted diet for some time, and frequently took more than the moderate amount of carbohydrates allowed. Despite the severity of the disease acidosis was not marked, presumably because of his liberal diet. Patient 194 was a young girl with diabetes of only a few months' duration and of a mild form. The youngest patient with diabetes who in our experience has shown edema was 30 years of age. Patients 155, 8, 186 and 163 presented all the requirements for the production of edema, save that their diabetes was of a mild type without acidosis. These patients failed to gain weight in the salt period. These experiments require confirmation. but so far as they go they suggest that salt is an important factor in the edema of diabetic patients.

If one studies the quantity of chlorin eliminated by patients in diabetic coma it will be found as a rule to be slight. This may be due partly to starvation during the last few days of life, partly to the excretion of chlorin by the intestines, and also partly to the use of sodium bicarbonate in considerable amount during the period previous to the onset of coma, as well as to its employment in excessive amount in coma itself. The low chlorin excretion in coma is shown in Table 4.

A study of this table will show that the chlorin was low almost without exception when alkalies were administered, and high in those instances in which no alkalies were given. The only instance (Magnus-Levy, Case 6) in which the chlorin approached normal limits when alkalies were given recovered from the coma. In that case dropsy, including ascites, was present. One explanation of the appearance of coma in a severe case of diabetes mellitus would be as follows: The restriction of the carbohydrates in the diet leads to the nonoxidation of very considerable quantities of β-oxybutyric and diacetic acid, quantities much above those already being formed in the body. The elimination of these acids causes an irritation of the kidneys. This leads to the retention of salt and the production of edema in those individuals whose bodies contain considerable quantities of sodium chlorid. When the chlorin is low in the body, as is frequently the case. due in part to the long-continuous use of sodium bicarbonate, or to the lack of ingestion of food and even partial starvation in the last few days preceding coma, there is no extra salt to be retained, and consequently no edema appears. These latter patients therefore are especially prone to coma because the acids remaining in the body are in a more concentrated solution. Nature on the one hand is making every effort to remove the acids from the body by the kidneys by means of the excretion of large quantities of urine, because only in this way can much β-oxybutyric acid be excreted, while on the other hand she is attempting to retain chlorin and water in the body to protect the normal concentration of body liquids.

TABLE 4.—CHLORIN EXCRETION IN COMA.

Author.	Case.	Duration of coma, days.	Total Cl. in coma, c.c.	Total vol. urine in coma, gm.	Remarks.
Magnus-Levy..	1	3	18.7	14,050	No alk. Died next day.
Magnus-Levy..	2	1½	1.30	6,590	Alk. ℞. Died.
Magnus-Levy..	3	3	18.49	10,060	No alk. Died.
Magnus-Levy..	5	2	5.24	5,400	Alk. ℞. Died next day.
Magnus-Levy..	6	5	13.22	36,825	500 gm. $NaHCO_3$. Recovered.
....	.	6	14.40	9,475	Out of coma. Ascites.
....	.	4	15.38	17,350	420 gm. $NaHCO_3$. Coma. Recovered.
Joslin........	4	3	3.9	23,850	Alk. ℞. Died next day.
Joslin........	135	3	6.4	15,990	Alk. ℞. Died next day.

The treatment of diabetic coma by the use of sodium bicarbonate has afforded unsatisfactory results, but prophylactically the use of alkalies appears to be of undoubted value. From the observations and experiments above recounted it would seem advisable to note the chlorin excretion in severe cases of diabetes, and when it is found low or when weight is falling yet the actual net caloric value of the food is sufficient, to add salt to the diet. In actual coma it would appear advantageous not only to administer large doses of alkalies, but also to give with them moderate quantities of salt. It is perfectly obvious that too much salt might do quite as much harm as too little. because by its administration too much liquid might be retained in the body, and the β-oxybutyric acid fail in excretion. Moderate quantities, however, would appear theoretically to be indicated. Only last year Folin suggested that the exclusive administration of one form of alkali was irrational and recommended a combination of salts.

CONCLUSIONS.

1. The withdrawal of salt from the body does not lead to the production of acid intoxication of the diabetic type nor does it increase an acidosis already existing.
2. Edema in cases of diabetes mellitus presenting marked acidosis frequently occurs coincident with restriction of the carbohydrates in the diet.
3. This edema is not due to the simultaneous administration of sodium bicarbonate.
4. The edema is probably caused by the increased production of acids causing injury to the kidneys during excretion, thereby leading to retention of salt.
5. Patients in diabetic coma almost without exception present no signs of edema, and show diminished chlorin in the urine if alkalies are given.
6. The careful administration of salt along with sodium bicarbonate is recommended in the prophylactic and actual treatment of diabetic coma.

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DISCUSSION.

Dr. Alexander Lambert, New York: The cases that cause us the greatest worry and require the closest attention are those of diabetes mellitus in most unstable equilibrium. It would be interesting to know whether Dr. Joslin noticed at some time a diminution of the excretion and whether, in the slow drying-out process which the system must necessarily undergo, the amount of thirst diminished as the edema came on and the diminution in the water became apparent. In a discussion the previous evening the question came up in regard to sudden changes in diet in diabetes. I have never hesitated in making these sudden changes in diet, because I have not, as a rule, given alkali; whereas those who give alkalies in a patient with a severe acidosis find it unwise to make these sudden changes. Changing the salt content of the diet, the sodium chlorid and the sodium bicarbonate must be of great moment to these people. I have never seen anything but benefit result from these sudden changes in diet when I did not give alkalies, when the indications were evident, of course. In cases of long standing one can not hold the diabetic to too severe a diet. When too low a diet is given acidosis in many cases may come on, or be most prone to come on. It is hard to keep a diabetic contented with a restricted diet. If by the use of salt, as Dr. Joslin has suggested, we can relieve patients of some of their symptoms, keep them in better equilibrium, and keep the equilibrium in a more stable condition, I think that the observations made by Dr. Joslin are most valuable.

Dr. J. M. Allen, Liberty, Mo.: Over thirty years ago I found chronic inflammation and ulceration of the duodenum on postmortem examination in two patients that died from diabetes mellitus. Since then I have made postmortems in five additional cases, and in each found chronic inflammation and ulceration of the duodenum and no other pathologic condition, except the ordinary changes to be found in the kidney. In all I have treated twenty-seven cases; the clinical symptoms of each were the same as those of which I made postmortem examinations. Hence I conclude that diabetes mellitus is the result of faulty metabolism in the duodenum, caused by the pathologic condition mentioned. The practical abilities of the old masters in our profession are nowhere indicated with more force than in the diet list given to diabetics by Watson, Wood, Flint and others, which mainly consisted in albuminoids, thereby requiring but little function of the duodenum, and lessening the possibility of physiologic hyperemia. I read a paper on this subject and along these lines before the American Medical Association at its semi-centennial meeting at Philadelphia.

Dr. G. W. McCaskey, Fort Wayne, Ind.: The clinical importance of metabolism has increased greatly during the past few years, and the entire question of metabolism has assumed a very important place. One must look to the test-tube for a solution of many problems in connection with clinical medicine. I was particularly impressed by what Dr. Joslin stated about the four cases of severe diabetes in which there was a chlorid retention with a serous effusion; whereas in the mild cases there was none. This seems to me to point to the existence of an impaired renal permeability, at least for salines. It has been shown by von Noorden that as diabetes continues on for a period of time the sugar in the blood must be increased considerably over 0.1 per cent. before glycosuria takes place. Normally when there is over 0.1 per cent. glycosuria ensues. Whether this is conservative on the part of Nature, or whether it is the result of the chronic irritation, there is diminished permeability of the renal epithelium and the sugars and chlorids gradually increase in the blood.

Dr. Elliot P. Joslin, Boston: With the diminution in the excretion of urine there is a corresponding diminution in thirst. Recently Dr. Goodall and I published in the *Boston Medical and Surgical Journal* personal observations on the manner in which acidosis affects young and old diabetic patients. We found that the latter succumbed to a degree of acidosis which young individuals could stand well. When an acidosis developed in a person of advanced years, or one past middle life, the prospect for life was less than when a corresponding degree of acidosis occurred in a young individual. Presumably it depended on the condition of the kidneys and their vulnerability. It is also interesting to know that it was only in the young persons that recovery from diabetic coma often occurred. The young person was capable of voiding large quantities of urine and so was able to wash the acids from the body. In one case nine quarts of urine were voided during recovery.

ABDOMINAL CERVICAL CESAREAN SECTION.*

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Obstetric therapy during the last twenty years has entered a new phase by the substitution of obstetric pubiotomy in the place of symphyseotomy. In the same way those methods of delivery which aim to extract the child by means of incision of the uterus have been markedly improved and enlarged.

The so-called vaginal Cesarean section of Dührssen, better termed hysterotomy, has opened a large field in obstetric methods. This operation has shown good results in cases in which the indication for rapid delivery, especially in eclampsia and in prolapse of the cord, necessitates such measures. Likewise the true Cesarean section, that is, delivery through incision of the uterus by the abdominal route, necessitated by narrowing of the bony pelvis, or because of stenosis of the vagina and cervix, has undergone changes in the last decade that are by no means inconsiderable.

Among these new methods Cesarean section, performed according to Fritsch, is of advantage because it consists of transverse incision through the fundus. By this means the placental site is most surely avoided, and the method also admits of a more rapid hemostasis, because the suture of the uterine wall is performed by ligatures inserted vertical to the course of the blood vessels.

Lately an attempt has been made to enlarge the scope of the Cesarean section with the view of further safety to the child's life by the introduction of cervical Cesarean section through the abdomen. This new method is to be credited to Frank of Cologne. The fundamental idea was not the same as that involved in the practice of making an incision into the lower uterine segment in order to avoid the placental site, but is based on the effort to extend the indication for Cesarean section to infected cases. The results of Cesarean section in the last few years have only become so excellent after we had learned to avoid unclean cases and to confine our operations to such cases as presented a more or less complete guaranty of good asepsis; therefore, those clinics especially whose material consisted exclusively of waiting women show brilliant results, with a maternal mortality of only zero to 1 per cent.

On the other hand, those operators who have dealt with women previously subjected to the more or less frequent examination of midwives, or to attempts at delivery at the hands of the general practitioner, in spite of good asepsis, still report a mortality of 10 per cent.

Frank's idea was to operate extraperitoneally. He was followed by Veit and Sellheim, who attempt to modify his method in another direction. While Frank incised both the abdominal parietes and uterus transversely immediately above the symphysis, Veit planned his incision through the median line, and Sellheim adopted my transverse fascial incision through the abdomen. All three operators direct their efforts to protecting the peritoneal cavity from infectious material—especially from the amniotic fluid—by operating either entirely extraperitoneally or subperitoneally. They do this by reflecting the peritoneum from the bladder and cervix, entering the uterus below the plica vesico-uterina (Frank, Sellheim).

The same result is reached by transperitoneal operation, the parietal peritoneum being incised above the bladder. The peritoneum covering the cervix is then severed, and before the uterus is opened the visceral and the parietal peritoneal surfaces are united either by suture or forceps (Veit, also Frank and Sellheim).

A number of patients have recovered after this method of operation. Of course it is questionable whether these patients would not have recovered just as well if the classic Cesarean section had been employed; the results, however, have not appealed to me in favor of this idea. Baumm and Sellheim have already reported deaths due to sepsis.

I do not doubt that other, as yet unpublished, cases had a fatal outcome. We are all well aware how difficult it is to distinguish between true infection and sapremic intoxication, or let us say for the sake of brevity, to distinguish dangerous from harmless microbic invasion *sub partu*, and, therefore, be in a position to form a correct prognosis. For a true infection may remain localized and consequently lead to a favorable outcome, while a sapremic intoxication may end fatally by producing general poisoning. The sharp distinction between infection and intoxication is theoretic and requires revision.

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* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

It is impossible in cases of fever *sub partu* to announce with certainty that this case is one of septic infection and, therefore, extremely serious, or that case is sapremic and, therefore, harmless. It is true that the experienced diagnostician will be guided in some cases by the general impression obtained from seeing the febrile patient, but such impressions can be deceptive. The simplest case would be one in which we know how the pregnant woman has been treated in the last few days preceding labor. For instance, when one is dealing with waiting women, who for many days before labor have been kept scrupulously clean, and during labor have either not been examined at all or only under conditions of strictest asepsis. If in such cases a rise of temperature *sub partu* occurs one can assume that this in general is of harmless nature; but even then it is possible to be deceived, as I have seen from personal experience.

It is known that pregnant women examine themselves, or allow themselves to be examined by other women, and thus infection can occur. The course of the infection is then puzzling to us, because the fact of its examination by unskilled hands has been concealed.

It is always well when dealing with febrile patients, or even with those in whom no fever is present, to consider them as infected, or at least as suspicious, providing we elicit the fact that the woman has been in labor for a long time or has been subjected to repeated examinations on the part of physicians or midwives whose asepsis is not reliable. If with these precautions we undertake Cesarean section, no matter by what method, there is no reason why a considerable percentage should not have a happy outcome, simply because no infection was present. On the other hand, it is equally true that in the fatal cases death might have occurred even if the delivery had been obtained through perforation instead of by Cesarean section, because we are dealing with a true, septic, progressive infection. But my standpoint is that it is not a matter of indifference whether the uterus of a febrile patient is left untouched or whether a complicated wound is made. The gravity of the prognosis is doubtless increased by the operation.

In this connection it is not alone the direct infection of the peritoneum with bacteria that must be taken into consideration, but also the fact that stagnating blood in both the uterine wound and in the uterine cavity furnishes a nutritive medium for the growth of the bacteria.

As important as it is to protect the peritoneal cavity from infected amniotic fluid, which is quite feasible by means of the above mentioned methods of Cesarean section, I am unwilling to acknowledge that this suffices to prevent fatal peritonitis. The same applies to the wound of the abdominal wall, which is the more imperiled the more complicated this wound is. To these objections others must be added. The fundamental thought of Frank is to protect the peritoneal cavity against the infectious wound area. The question then arises, "Is this technically possible?"

Complete subperitoneal operation, such as is recommended by Frank and Sellheim, is at times not feasible, as I have found by experience, and as is acknowledged by both these authors. They, therefore, advise in such cases—and Veit has adopted this in his longitudinal incision—cutting through the parietal peritoneum and the cervix, to undermine them, and to unite them by means of forceps. This produces a closed subperitoneal space, to which access to the cervix is obtained. Thus somewhat greater safety against infection of the peritoneal cavity is secured. But this is not an absolute guaranty, as infectious bacteria are known to break through such artificial barriers. It is, therefore, logical and right that Frank, who produces a broad skin and muscle wound, and, in addition, opens a large, subperitoneal, cellular area, should advocate open wound treatment and drainage. The abdominal wound is equally endangered if infection arises after my transverse fascial incision.

Sellheim has frankly acknowledged that he made a mistake in one fatal case by omitting drainage, but experience has shown that in most cases such drainage is entirely unnecessary. The same difficulty which confronts us in deciding the question whether in a given febrile case infection is present or not confronts us in deciding whether the wound is to be left open or the peritoneal cavity completely closed. The drainage entails a further risk, as it favors the likelihood of abdominal hernia as well as the consequence of abnormal adhesions in the cervical region with the abdominal wall, by no means inconsequential to the future well-being of the patient.

It is questionable whether we are justified in exposing the mother to all the above dangers in order merely to save the life of the child, which, as we know, is extremely jeopardized in the presence of infected amniotic fluid. I would like to answer this question in the negative and to advise that in all cases in which infection may surely be assumed, or in which a distinct suspicion of it is justified, to sacrifice the child by perforation, or where the pelvis is too narrow, to resort to Cesarean section, after the method of Porro.

I believe that our modern attempts to save the child's life shoot beyond the mark, and, therefore, at least for the present, I must refrain from endorsing the extraperitoneal Cesarean section. But I am not prepared to discard Frank's idea completely in those cases in which the fever in a pregnant woman gives the general impression that the rise of temperature is harmless. I would advise, however, not to operate subperitoneally, but transperitoneally.

My experience in the realm of abdominal surgery has given me great confidence in the capacity of the undamaged peritoneum to destroy bacteria. It is well known that the peritoneum possesses these faculties to a much higher degree than the widely opened connective tissue surfaces.

Attempts to protect the body against invasion of bacteria within the abdominal cavity can be made by the injection of oil into the peritoneal cavity during the Cesarean section, as I have proposed, based on the experimental work of Glimm. That this measure is capable of preventing fatal infection has been shown experimentally by Glimm as well as the fact that the injection of oil, at least into guinea-pigs, is harmless.[1] My own clinical experience has as yet been too scanty to permit of any final judgment, especially as I have been unable to apply the method in Cesarean section. So far as I am concerned, I would not hesitate to perform transperitoneal Cesarean section, combined with the injection of oil, in cases of apparently harmless fever and a living child. The proper dose consists of 200 c.c. of olive oil, which has been sterilized for half an hour on a water bath at a temperature of 100 C. (212 F.). This fluid is simply poured into the abdomen by means of an irrigator during the course of the operation.

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[1] Reported from my clinic by Hoehne.

Concerning the technic of the Cesarean section, I have rejected the extraperitoneal method of Frank, Veit and Sellheim: but the work of these operators has taught me that the classic Cesarean section, as well as the modification of Fritsch, can be improved by employing the cervical incision. My technic which I have reported[2] resembles that of Sellheim, but differs from it basically in that I operate transperitoneally.

To recapitulate, my technic is as follows: A typical *transverse incision, about 15 cm. long, is made at the* level of the anterior superior iliac spines; the aponeurosis of the rectus muscle is reflected up to the symphysis and down to the umbilicus. The peritoneum is then incised longitudinally for a distance of about 10 cm. Then a careful incision of the cervix is made between the bladder reflection and the contraction ring. The peritoneum is carefully guarded against contamination of amniotic fluid by means of pads, etc.

If one does not operate too early, that is, if one waits until the cervix has dilated and been partly absorbed, then the bladder rests merely against the vagina and no longer against the cervix. It is then unnecessary to separate the bladder from its underlying parts, as one has sufficient room to deliver the child by the direct cervical incision.

Should the plica vesico-uterina still be high in situation, this fold is incised, separated from the bladder and the bladder pushed down, exactly as in the abdominal operation for fibroid uterus. The child is now delivered by means of lateral pressure or extracted by the feet. After a short pause, which is occupied with cleansing, changing pads, etc., the placenta is delivered either spontaneously or by means of pressure exerted on the fundus (through the abdominal wall) similar to its ordinary delivery. The cervical wound is sutured in two layers and a typical closure of the abdominal wall is made. I have employed this method so far in one case with recovery. Rubeska reports a similar case. The method has numerous advantages over the classical operation of Saenger and that of Fritsch.

1. All the advantages inherent in my transverse fascial incision, that is, (a) the morbidity, and with it the mortality, has diminished, because the uterus remains *in situ*, and the rest of the peritoneal cavity is guarded from contamination from without; (b) the danger of a ventral hernia is eliminated; (c) the patient is able to leave her bed early (in normal cases from the third day on), which shortens the convalescence considerably.

2. Further advantages are due to the situation of the uterine wound. In most cases the hemorrhage is minimal—with the exception of placenta prævia. (a) No large vessels are situated within reach of the incision; (b) detachment of the placenta is entirely left to Nature.

The course of labor resembles, as Sellheim has justly said, more closely a physiologic process. My operation excels that of Sellheim because of greater simplicity and the avoidance of all those objections previously discussed in criticising the extraperitoneal method of Frank and Veit. My operation also can be applied in cases in which the mother has an apparently harmless fever, and in which the life of the child must consequently receive due consideration. In these cases the oil injections are to be employed immediately after the extraction of the child.

The application of the cervical Cesarean section is extensive. First, in contracted pelvis, the indication for pubiotomy must, however, not be narrowed, as the excellent results recently obtained should be taken into consideration. Only in cases in which pubiotomy no longer promises a sure chance for the child is Cesarean section to be undertaken. Cases of stenosis due to scars or neoplasms of the internal genitals stand on a similar plane as contracted pelvis, unless some radical tumor operation (myoma) *indicates a different technic. Further,* cervical Cesarean section is applicable in cases of threatened rupture of the uterus with living child, unless an already existing infection is present as contraindication. This is exclusive of the previously mentioned cases of contracted pelvis. Unlike Sellheim, I would like to emphasize the indications for vaginal Cesarean section, which are distinctly special. In fact, the results of this method have been good.

In conclusion I would say that the extraperitoneal method of Cesarean section should be discarded, because it is harmful to the mother and of uncertain value, at least in febrile cases, to the child. In contrast to this, transperitoneal cervical Cesarean section marks a distinct progress. In some cases in which there is fever in the mother it is indicated, but must then be combined with a prophylactic injection of oil into the peritoneal cavity.

ABDOMINAL CESAREAN SECTION,

AS PERFORMED AT THE SOCIETY OF THE LYING-IN HOSPITAL OF THE CITY OF NEW YORK, WITH AN ANALYSIS OF 186 CASES.*

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In presenting this paper for consideration, it is my intention to take up, so far as the time allowed me will permit, the question of abdominal Cesarean section, with regard to the indications for its employment, the choice of time for its use, the technic of the operation, and the results obtained. In a general paper of this description, it would be trying to the patience, as well as unsuitable, to give more than a passing consideration to the details of the subject, the main object being to show the results obtained from a large number of sections, together with certain especial points in the technic of the operation.

The series of cases reported comprise the total number done in the Lying-in Hospital during the eighteen years of its existence, and are, therefore, in no sense of the word, selected cases. It will be my endeavor to show some of the dangers, as well as the advantages of this method of delivery.

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[2] Zentralblatt für Gyn., 1908, No. 10.

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

INDICATIONS FOR OPERATION.

Broadly speaking, Cesarean section by the abdominal route is indicated in all cases where there is a degree of obstruction to delivery, either on the part of the mother or the child, sufficient to render such delivery impossible with best results to both, it being understood that the child is viable and that the condition of the mother is such that she will survive the operation. Such indications may be classified as follows:

1. Deformed pelvis.
2. Placenta prævia.
3. Eclampsia with a firm, undilated cervix, and complicated or not with the two previous causes mentioned.
4. Neoplasms of the uterus, such as fibroids, carcinoma, etc.
5. Vaginal deformities, such as marked contraction from scars, tumors, etc.
6. An excessively large child.

Taking these up in order, by the term "deformed pelvis" I mean any pelvis which is so contracted as to render impossible the passage of a normal living child. This may express itself in the form of a flat, justominor, rachitic, Naegele, Roberts or osteomalacic pelvis, the important feature for the obstetrician to realize being that in the individual pelvis the particular fetus will not come through alive, or without extreme damage to the mother or child or both. The day is past when we do Cesarean section simply because the true conjugate is shorter than normal, for we have learned that in some cases, notably in the type known as the Roberts pelvis, the true conjugate is not only not diminished, but may be even longer than normal, and yet delivery by the natural route be impossible on account of the amount of the contraction at the sides. In short, then, the surgeon must train his hand by frequent examinations to judge, first, the size of the pelvis and, second, the size of the fetus, and, lastly, he must be able to form an opinion as to the relations which the two bear to each other, if he expects to have a favorable outcome to his cases. These considerations, taken in conjunction with the apparent physical force of the mother and such supplementary information as the history of previous difficult labors will form the means for his decision for or against Cesarean section in an individual case.

Regarding the utility of this operation in placenta prævia, it is my belief, as expressed in print[1] some months ago, that in certain cases of placenta prævia, with a central implantation, in the presence of a firm, undilated os, where the soft parts are firm and unyielding, less damage will be done to the mother, and we shall be more certain of securing a living child by a timely Cesarean than by resorting to the other usual methods of delivery. The mortality in this condition, as shown in the article just mentioned, is, under the best circumstances in hospital practice, almost 18 per cent. for the mother and over 40 per cent. for the child, while the morbidity (maternal) on account of hemorrhage, laceration and possible subsequent infection is very great. It would seem as if any methods of delivery which offered as a result 40 per cent. of deaths were open to a good deal of criticism.

With regard to eclampsia, under similar circumstances, a better result may be expected than in many cases of forced delivery.

Concerning the other causes mentioned, time will not permit of more than a passing mention, but it certainly must be obvious that when neoplasms fill the lower segment of the uterus or vagina, when scars have contracted the vagina to a point where the passage of a child can not but cause grave destruction to the soft parts, or where the size of the child is out of all proportion to the size of the pelvis, especially if the head be one of the type not infrequently encountered, in which the ossification seems to be premature, and the head is firm and unlikely to mold, in these cases, too, it would surely seem as if an elective Cesarean section, done by a competent operator, was the operation of choice.

TIME OF OPERATION.

It has been our custom at the Lying-in Hospital to allow the patient to go into labor sufficiently to secure some dilation of the os, thereby facilitating drainage, and to determine whether or not the head will make an attempt to engage. This also has the advantage of allowing us to be certain that the woman is at or about term, which in occasional cases, notwithstanding opinions to the contrary, is not an easy matter to determine. Recent articles have condemned the operation after the onset of labor, but, as I shall hope to show later, this form of procedure is not unsatisfactory in its results. It is freely admitted that where we can have our choice the time of election is just before or at the beginning of labor. In a service such as we have at the New York Lying-in Hospital, however, this choice is not always possible, as the patient is often not seen until she is well advanced in labor. Then, with a viable fetus, we have only the operations of hebotomy, symphyseotomy, craniotomy on the living child, or Cesarean section from which to choose. Symphyseotomy has been universally given up, and the published results of hebotomy are not, to our minds, very encouraging, containing, as they do, reports of tardy and severe convalescences often with protracted recoveries and considerable damage to the mother. While at our institution we have as yet done no hebotomies, we do not yet feel that we are justified in performing the operation. This leaves us with nothing then but a craniotomy on the living child, or a Cesarean section, and up to the present we prefer in most cases to take the chance of the section. It is true that we may possibly have a fatal result, but that is not a reason for relegating the operation to the background, for we shall always have to take a certain number of chances in surgery. No well-grounded surgeon would think of refusing to operate on a severe case of appendicitis simply because statistics showed that he got better results in the interval cases. Why, then, should we refuse to do an operation to save the life of the child when we do not know that the mother will not recover and are practically certain that the child will be born alive? Here, as in other cases, the discriminating judgment of the operator, based on knowledge obtainable only by experience, must determine which cases are and which are not suitable for operation.

OPERATIVE TECHNIC.

With regard to the operative technic, I can do no better than to quote from an article[2] by Dr. Asa Barnes Davis of our attending staff. He says, after describing the usual preparation for a laparotomy:

> The abdominal cavity is opened by a median incision 12 cm. in length, extending from above downward to the umbilicus. The fundus of the uterus is found directly under this wound. If dextro torsion, which is frequently present, occurs, the

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[1] Bulletin of Lying-In Hospital, December, 1907.

[2] Lying-In Hospital Bulletin, December, 1905.

uterus is manually adjusted so that the anterior uterine wall faces forward. The abdominal cavity is then walled off by means of three or four moist gauze pads, wet in salt solution. This leaves only a small area of the uterus exposed to view. [It is understood that the uterus is not delivered from the abdominal cavity.—R. M.] An assistant now places a hand at either side of the abdominal wall, near the wound and well backward, so regulating his pressure that the uterus remains in place during the process of being emptied, and afterward until the deep sutures are tied. A median incision, which begins well up at the fundus and extends downward so that it is a little longer than the abdominal incision, is made. This incision should be made carefully so that the amniotic cavity is not opened. Should the placenta be found situated directly under the wound, it is better to cut or tear directly through it. If, however, the membranes present, it has been found advisable to sweep the hand quickly between them and the inner surface of the uterus, in order to prevent adhering of the membranes. The lower extremity of the child, which is most readily found, is grasped and practically a breech extraction is done, the after-coming head being delivered by the *Smellie-Veit* maneuver. *The cord is clamped and cut by an* assistant, and the child is carried from the room, in order to avoid confusion while establishing respiration. A double tenaculum is now placed on either edge of the uterine wound at its upper angle to prevent the uterus from slipping down into the wound, the uterus is emptied of any clots which may have formed, also of the placenta, and with as little delay as possible the deep interrupted sutures of heavy chromic catgut are placed; each suture is inserted about one centimeter distant from the edge of the uterine wound, carried down to the endometrium, and passed through the opposite side in reverse order. After these sutures are placed, being tied as they are put in, a continuous suture of fine catgut is used to bury the first row of sutures, and brings the peritoneum into apposition. The sponges are now removed, and the abdomen closed in layers in the usual manner.

A dry dressing is applied which is not disturbed until the eighth day when the sutures are removed. The patients are allowed to sit up at any time after the tenth day and always before the fourteenth day, depending on the involution of the uterus and the condition of the wound.

RESULTS.

With the foregoing observations on indications, and description of the technic, the results obtained in this series of 186 cases may be reviewed.

Out of the total number, thirty mothers died, showing an apparent mortality of 16.15 per cent. When, however, we come to analyze the actual cause of death we shall see that the percentage which can actually be attributed to the Cesarean section is in reality very much lower. Of these women, three died of postpartum eclampsia, six of pneumonia, one each of suppression of urine, shock following a low rupture of the uterus before admission, nephritis, pulmonary embolism, carcinoma, intestinal obstruction, acute dilatation of the stomach, asphyxia from the anesthetic and paraplegia. One was unaccounted for, two died of shock following the operation. The remaining nine died of septic peritonitis. These had all been subjected to more or less manipulation before entering the hospital, and in all cases cultures taken from the vagina and cervix showed streptococci.

These patients were operated on with the hope of saving the life of the child, with the result that out of the whole series of thirty deaths of mothers there were but four still-births.

It seems fair to exclude from the mortality statistics cases in which death was not directly due to Cesarean section, and while the argument may be used that if the patient had not undergone the operation she might not have died, still it hardly seems fair to include deaths from anesthesia, nephritis, Pott's disease with paraplegia, postpartum eclampsia and the other causes already mentioned, since these might have caused the death under any circumstances. Indeed, some of the patients cited would surely have died in a short time, and the operation was done only in the hope of saving the child. Accordingly, then, on account of the operation of Cesarean section *per se*, the real mortality figures would seem to be those of the patients that died of sepsis. Of these we have nine, which gives us a mortality for the operation of only 4.08 per cent., not an unsatisfactory showing.

The total number of still-births in the whole series was thirteen, or 6.9 per cent. It is interesting to note that eleven of these still-births occurred in the first *seventy-eight cases, and that in the last 108 operations* we have had only two still-births.

The indication for operation in 162 cases was a deformed pelvis, and the remaining twenty-four operations were for malignant growth, atresia of the vagina, impacted face presentations, eclampsia, central placenta prævia, of which latter there were two cases, with a living mother and child resulting in each instance, disproportionately large head and impacted shoulder. The membranes were ruptured before operation, and the os uteri was more than two fingers dilated in 124 cases.

In all the instances but one of death from sepsis the membranes were ruptured, the patient had had outside manipulation, and had been a long time in labor.

SUMMARY.

With these necessarily brief observations I will conclude with what seem to be the main points brought out by a study of this series of cases:

1. Cesarean section is the operation of choice when the obstruction to delivery is such that a viable fetus can not be delivered by the normal passages and the mother offers a fair chance of recovery.

2. This obstruction need not of necessity be a deformity of the bony pelvis, but may be caused in several other ways, as indicated above.

3. While elective Cesarean section just before labor or at the very beginning is desirable, the fact that the patient has been for some time in labor, does not in itself preclude the possibility of doing the operation.

4. The operation requires a particular technic, with skilled assistants, to get the best results, which makes it undesirable to undertake it unless the conditions are satisfactory.

5. These special points in technic are:
   a. The high incision.
   b. The non-delivery of the uterus from the abdominal cavity.
   c. The absence of any method of constriction to prevent bleeding, this not being necessary.
   d. The method of suture described.

6. Where the conditions here described exist, and excluding patients who would die whether they had a Cesarean section or not, the results should show a maternal mortality of not much more than 4 per cent. of the cases and a still-birth percentage of almost nothing.

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DISCUSSION.

ON PAPERS OF DRS. PFANNENSTIEL AND M'PHERSON.

DR. W. H. WATHEN, Louisville: Twenty-five years ago, before the Section on Obstetrics of this Association, I read a paper, stating that the time would come when no man would be justified by the medical profession, either from a scientific or from a moral aspect, in performing craniotomy on a living child. I am glad to see that that principle has now been recognized. There is no excuse whatever for performing craniotomy on a living child. It is a more difficult, more dangerous operation than even the old classical Cesarean section. It destroys the lives of all the children and of many of the mothers, whereas Cesarean section, if the woman is brought in a reasonably good condition nearly to term, saves the lives of nearly every woman and child. We sometimes lose children because we are compelled to operate before the child is entirely viable, but with the modern methods of incubation many of the children are saved. Recently I operated in two cases in which I lost the children because the operation was a necessity when viability was doubtful. One was the case of a woman on whom I operated because of total obstruction of gas and feces. She had been in premature labor twenty-four hours. A large myoma filled the entire pelvis so that the cervix could not be felt. The child was removed barely alive, but did not survive more than four or five hours. The uterus and the fibroid tumor were removed. The second case was one of placenta prævia of about the same term of pregnancy. The child was removed and lived for about the same length of time. In both cases, I believe, with the modern methods of caring for the child, it would have been saved, but in the hurry to operate to save the life of the mothers the best incubators could not possibly be had. Both mothers made a prompt recovery. I am in favor of Cesarean section in nearly every case of well-marked placenta prævia as an operation of election in the interest of both the mother and the child. These operations are more easily performed than of most any other major abdominal operation. The simple Cesarean operation without removal of the uterus is a very slight affair with an experienced abdominal surgeon. If there is a contraction of the pelvis, preventing the delivery of a healthy child, the uterus should be removed, and it can be removed in about half the time that a uterus can with a myoma because of the relaxed condition of the structures. If there be a fibroid tumor it ought to be removed, and it can be removed much more easily than an ordinary fibroma. I am glad to have heard of the 180 cases with the beautiful results reported by the speaker from New York. The time will come when, if we can make a timely diagnosis and carry these patients up to labor, with operation under favorable conditions in a hospital, the mortality will be practically nil.

PROF. AUGUST MARTIN: A new operation must be recommended to general practice with some reserve, but hardly any new operation has been based on better anatomic conditions than this one; not only is it true that in the median line of the uterus in front and behind we do not meet large vessels, but also that the whole situation of these parts in this stage of parturition in which the operation is usually indicated is in a better condition for operation than any other. If the anterior lip is split, in most instances one does not meet the bladder nor the peritoneum. That is the point to be avoided. There are some peculiar conditions, but in most cases these dangers are avoided.

The vaginal Cesarean section is not an operation that can be made or indicated when there is pelvic contraction. There are different indications for vaginal section, but there is no contention that this is an operation of emergency. If there is time, it is far better to reduce uterine contractions and dilate the uterus by natural procedure and deliver the child. But there are, indeed, sufficient cases of emergency, and in these vaginal section is better than any other way. I am particularly disinclined to the Bossi instrument. Dr. McPherson believes this operation to be rather dangerous for its morbidity and mortality. As far as I know, experience indicates that not only in the hands of the specialist, but also in the hands of many obstetricians this operation is a very good one. New operations must be introduced into practice by teaching, and in many clinical wards, as far as universities are concerned, our students have ample opportunity to see these operations. In every instance in which I have operated before my students they are astonished to see the simplicity of the operation. It is striking to see that the vaginal wall separates very easily. It is possible to separate as far as that part where one can take hold of the head by forceps or perform turning and the deliverance of the child. In my early experience I carefully watched the bladder and did not have any difficulty, but the most interesting part to me was the peritoneum. In most of these instances we do not meet the peritoneum, even if we have to go on incising the uterine wall. It is astonishing to see that we can go very high into the uterine wall without injuring the peritoneum. The opening of the uterus is, in fact, very easy and the delivery is in the same way very easy.

Concerning the repair it is equally astonishing to see how we can bring down all these parts and secure this wound by a running suture in the mucous lining and by another pelvic suture which closes the outer surface of the colum uteri and catches the base of the bladder, leaving at the very end in the vaginal wall a small wound which is shut at once with a lower suture. So the technic is, indeed, a simple one. As far as I have seen, an obstetrician who is accustomed to do any obstetrical operation is competent also to do a vaginal operation. Asepsis in the beginning seemed to be a difficult task, but it needed only a few years to become universal. Another difficulty in the way of the vaginal operation is the narrowness of the outlet. The reason for this narrowness is the more obvious since the cervix uteri is not dilated. The life of the mother or the child forces us to deliver at once. It has been said that the narrowness of the parts is a great impediment. This can be avoided by cutting up the left or the right side of the vaginal wall, not in the median line, which gives bad cicatrization, but cutting from the end of the nymphæ up to the vault so that the full hand can be inserted. The uterus is opened and delivery and closure of this wound are made, and these patients, so far as I have seen, made an excellent recovery if not infected before. I ask permission to give these remarks because of my conviction that the vaginal operation in this way is one of the best we do in obstetrics, and that in doing this we save more lives of mothers and children than in any other way.

DR. J. B. DE LEE, Chicago: The indications for Cesarean section should be enlarged. There is no doubt that the danger of opening the abdomen in obstetric cases is greater than it is in other cases, but why this is so we can not understand. That peritonitis follows abdominal operations more often when a woman has been in labor than it follows in cases of similar gravity and other surgical complications is a certainty in my experience.

The attempt to increase the chances for the child is a most commendable one. Every obstetrician abhors the operation of craniotomy and seeks by other means to increase the number of living children in his obstetric cases. In order to improve the mortality of Cesarean section, we should seek to improve the conditions under which the operation is done. One of the means of improving the conditions is by making the incision in the uterus in the lower part of the organ, and therefore in the lower part of the abdomen, because the lower part is less liable to infection, the intestines come less into play, and there is less interference with the bowel when the lower part of the pelvis is invaded. To my mind, this is the only advantage of the operation as Professor Pfannenstiel has described it. The danger of infection in Cesarean section must always be reckoned with, because we do not know when it is present. No clinical, no bacteriologic test, will give any information in such cases. Craniotomy, however, on the dying child, still has a place in obstetric practice. Let us save the *child's life by doing better obstetrics* under the following conditions, and the number of children saved will be ten times greater than the number of children saved by Cesarean section and other operations of this class. The indications for Cesarean section in a general practitioner's work are so rare that the number of children saved in this way is very small. If the general practitioner will try to preserve the child's life in the following every-day complications, he will save a large number of them: 1. A perfectly healthy woman with a large pelvis and a normal child with a somewhat more resistant perineum than usual. The practitioner should give the perineum time to dilate, restrict the use of forceps, watch carefully the child's heart, and at the first indication of danger interfere. A large number of children will thus be saved who otherwise would be killed by forceps. 2. Occipito-posterior positions in perfectly healthy women, with normal babies and everything normal, except the occipito-posterior position. Let the physician here, instead of using the obstetric forceps, high or low, with the exhibition of brute force, carefully watch the progress of Nature, study the mechanism, and by some manipulations with his hand restore the normal position or aid the normal rotation. He will in this way save a large number of children. 3. Let him observe a watchful course of treatment in face presentation and only interfere in the presence of disproportion and in the indication of danger to the child. 4. In prolapse of the cord let him adopt some of the operations suggested, particularly the vaginal Cesarean section, or let him try the colpeurynter by the method of Dr. Stowe. 5. Let him learn how to care for breech cases.

Dr. Henry D. Fry, Washington: I am glad that Dr. Pfannenstiel does not recommend a subperitoneal or extraperitoneal operation for Cesarean section and that he prefers the transperitoneal. The operation he suggests, however, does not appeal to me because in the cases that are not infected there is no objection to going right through the peritoneum and operating in the usual way. In these cases I have always noticed that the incision ought to be as high in the uterus as possible. One begins the incision in the upper part, and as one goes to the lower part of the corpus one gets into larger vessels and has more hemorrhages. This is a distinct objection to his operation. I want to get as far from the cervical tissue as possible and open the uterus high up. He asserts that there is less danger of hernia. I think that there is scarcely any danger of hernia if the wound is sewed properly.

I do not think that abdominal Cesarean section in cases of eclampsia is justifiable. In a paper which I shall read on prompt delivery in eclampsia I shall report twelve cases of vaginal section for eclampsia with eleven recoveries and one death. In the one death the patient was almost moribund when the operation was done. I think it is an ideal operation and does away entirely with abdominal Cesarean section for eclampsia.

I do not believe that abdominal Cesarean section is indicated in placenta prævia, and I think that the field for its employment is very small. In a primipara with a small vagina, small cervix not effaced and a central implantation, an abdominal Cesarean section can be done. I have reported thirty-two cases of placenta prævia in which I delivered the child by the natural passages without maternal death. If we can deliver a woman with this condition so successfully by the natural passages, I do not think that we ought to subject her to Cesarean section, and I believe that we should do it only in a few cases, the indications in a case being that the patient is a primipara with a central implantation and a cervix not effaced.

I do not agree with Dr. McPherson that symphysiotomy is universally discarded, and believe that if, in certain cases, he had used it he would not have had such a high mortality from Cesarean section. We ought to select the cases and eliminate such bad ones as he had. Evidently good judgment was not employed and patients operated on that should not have been subjected to operation. If my results were not better than his, I might change my technic and adopt his. He says that one must not take the uterus out of the abdominal cavity on account of the danger of shock. That is all theoretical. The uterus can be taken out of the abdominal cavity without danger of shock. I have had nineteen Cesarean sections in which the uterus was taken out of the abdominal cavity, and not picked cases, but cases that were brought into the hospital, some in labor for thirty-six hours, and in those nineteen cases there were eighteen recoveries and one death. The patient that died died because of acute dilatation of the stomach.

Dr. J. H. Carstens, Detroit: It seems to me that this operation described by Professor Pfannenstiel is not for the general practitioner. It is more difficult than Cesarean section. I think it an ideal operation in selected cases in hospitals where there are the facilities, but to perform this operation somewhere in a cottage, down here on the Illinois prairies, opening up all the loose cellular tissue and all those little channels where there is a chance for septic absorption, I think is a pretty serious thing. We are not so afraid of the peritoneum as we used to be. The operation of vaginal Cesarean section is the one operation for eclampsia. In eclampsia it is necessary to operate quickly. The child in from three to five minutes can be delivered. Any general practitioner ought to be able to do that operation and he should familiarize himself with the methods of operating, because he is the one who has the cases of eclampsia. He can split the anterior lip and deliver the woman in a few minutes and save many women's lives.

So far as Cesarean section itself is concerned, I think that the lines ought to be drawn more broadly. Patients can not always be saved. In order to save the patient it is necessary to make a diagnosis of the condition beforehand, to get the measurement of the pelvis and to be prepared to do Cesarean section in time, and not try all modes of delivery and then when the poor woman is septic and used up finally decide to do a Cesarean section. That is not fair to the man who does the Cesarean section. If one man can not do it, he can get help. The hospital facilities are so great in this country and in Europe that any man can get assistance in a very short time. But the important point is to be prepared to do Cesarean section in time.

Dr. William B. Reid, Rome, N. Y.: It is possible for a country doctor and general practitioner to do a Cesarean section, either abdominal or vaginal, and to do it successfully, not only for the mother, but for the child. During the past twenty months I have had opportunity of doing eight Cesarean sections, and I report these cases without mortality. I differ from the previous speakers regarding the technic. I do not believe that these little points make so much difference. I believe that the vital point is to be sure of the diagnosis. I do not know of any one having spoken of or written on the use of the *x*-ray previous to confinement for the purpose of measuring the pelvic outlet. The most important point of all, having decided the necessity of doing the operation, is to do it expeditiously; do not kill the patient from shock. It is not whether the uterus is raised or left in. It is how much time is spent and how much shock is given the patient. The average time consumed in these operations that I referred to was twenty-six and a half minutes. I am ashamed to say that in the last one I took thirty-six minutes.

Dr. Lester E. Frankenthal, Chicago: After a careful perusal of the literature that comes to us from abroad and in our own country, I came to the conclusion that I would never subject a patient of mine to the extraperitoneal cervical Cesarean section. Shortly after coming to this conclusion I was asked to see, in consultation, a case of eclampsia. The patient was brought to the hospital and died about thirty minutes after I first saw her. I was at that time preparing for another operation in the operating room, and being notified of her death, I hastened to her room in order to do, if possible, a Cesarean section on the dead in order to save the child. Some time elapsed before I could get the necessary instruments—a knife or a scalpel was all I asked for. While waiting for the instruments I auscultated but could not hear the fetal heart sounds. I then decided to do the Sellheim operation in order to get personal experience in this operation on a pregnant though dead woman. I found the difficulties that have been described in the literature of separating the bladder from the peritoneum and found that it was impossible in this instance to avoid tearing the peritoneum at the insertion of the median vesical ligament so that had this been a septic case the peritoneal cavity would have been opened and sepsis could probably not have been avoided The position I take is that pubiotomy and Cesarean section are positively contraindicated in all septic cases, and, notwithstanding the remarks that have been made here this afternoon I should not hesitate, if delivery were impossible by the natural passages, to do a craniotomy on the living child, because I reason that the life of the mother is of greater value than the life of the unborn or born child, especially since in the event of the death of the mother the chances are greatly in favor of the child's not growing to maturity Besides, if a craniotomy is performed on the child and the mother recovers without any untoward results, as she ought to in the vast majority of instances, another opportunity is given her for a subsequent pregnancy, and a premature delivery, a Cesarean section or a pubiotomy can be done in a subsequent pregnancy at the proper time, before the woman has become infected, and she can then personally rear her child, since recovery is practically assured I believe that having had this experience on the dead—it was a rare opportunity—I shall never subject an infected patient to the extraperitoneal Cesarean section and in other cases (non infected cases) when Cesarean section is indicated I should prefer to do either the required Cesarean section or the intraperitoneal Cesarean section as most of us have done many times

Dr I S Stone Washington I oppose Dr Pfannenstiel's suggestion for this reason If Cesarean section is wrong in an infected woman because she is infected, the danger is not necessarily because the peritoneum itself will be involved or infected We all know that the peritoneum is about the best friend that the abdominal surgeon has I was much surprised to hear a man say that a majority of his fatal cases were a result of peritonitis Such is not my experience A majority of deaths in my cases are from sepsis, and I would rather trust the peritoneum to care for an infection transmitted by operation than by the method suggested by Professor Pfannenstiel, or any of those operations which expose the connective tissue around the bladder The possibility of a patient dying from sepsis with lack of drainage has been mentioned If infectious matter can be forced from the uterus into the peritoneum, it certainly can be forced into the connective tissue, and that ought forever to contraindicate that operation

Twice since the paper of Dr McPherson has been read I have heard suggestions in favor of a return to mutilating operations on the child I must have been living in a land of dreams I have been living in Washington where we do Cesarean section without mortality, and when I hear the New York statistics which announce a mortality of 16 per cent, I do not wonder that these speakers mention the mutilating operation of embryotomy

Dr Ross McPherson, New York I regret that I did not make myself clear on the question of mortality I made a statement of a total mortality of 16 per cent, but I said in addition that the mortality in cases in which sepsis occurred was only 4 per cent If I had wished to select the cases I could have shown over a hundred with no deaths at all but it was my desire to be perfectly honest and to give the statistics exactly as they occurred even at the risk of having them misunderstood I do not consider that a death from general carcinoma or from paralysis following Pott's disease should be laid at the door of a Cesarean section done for the sole purpose of saving the life of the child Dr Fry spoke as if he thought that I had done all of these cases myself Such is not the fact My own record is eleven cases with eleven living mothers eleven living children and eleven primary unions resulting

I did not state that Cesarean section by the abdominal route was indicated in every case of eclampsia but in certain cases in which the pelvis is even a trifle contracted Cesarean section by the vaginal route does not offer any more ease of extraction than without it, as by the vaginal route the bony pelvic obstruction is not in any way relieved I do not see any reason to change my views in regard to placenta previa and concerning symphysiotomy, I stated that I knew of no place where that operation was being done at the present time Our experience at the Lying in Hospital proves that patients are liable to have more shock, and to bleed more when the uterus is removed from the abdominal cavity In the first fifty or sixty cases reported, the uterus was so removed, since which time we have not done so, and believe that we have had better results Concerning the use of the *x* ray, a number of German observers report the death of the fetus after the prolonged exposure necessary to obtain a good negative of the pelvis This is worthy of consideration

THE PREPARATORY AND AFTER-TREATMENT OF ABDOMINAL SECTION.*

HENRY T BYFORD, M D

CHICAGO

Recent discussions on the preparatory and after-treatment of abdominal section have shown great disparity of opinion. *Some advise a thorough and extended* course of preparatory treatment, including medication, dieting, free purgation, etc, while others condemn everything in the nature of a delay or of a change from the patient's ordinary mode of living After operation some advise the withholding of even water for 24 hours and solid foods for a week, and the maintenance of a recumbent position for two or three weeks, while others give solid food as soon as the effect of the anesthetic has passed off, and get the patient out of bed on the second day. Some give opiates in the majority of cases, others give none, some allow the bowels to become constipated, others begin with laxatives as soon as the patient can take them When doctors disagree so radically, who shall decide? In order to get a perspective view of the subject, let us briefly review its history

When we began to perform abdominal sections, antisepsis and asepsis were not understood, and our results were so unsatisfactory that such operations were seldom undertaken until a fatal termination without interference was not only assured but imminent Hence the mortality was excessive, and those who survived often required careful and prolonged after-treatment to keep them alive and cure them of the effects of the operation. Peritonitis, ileus, abscess formation, secondary hemorrhage, imperfect suturing, suppuration about ligatures, infection and separation of sutured surfaces, etc, were so common that the patients were kept in bed for four weeks or longer and were not allowed to be turned on the side for one or two weeks A routine practice of allowing them to get up during the first week would certainly have been unwise under such conditions

In order to enable them to survive, the surgeons began to develop a complicated system of preparatory treatment, which became still more complicated when the principles of antisepsis began to be applied systematically Thus an abdominal section with its preparations its complications and medications, to say nothing of the operation itself, was usually a terrible ordeal, of two or three months duration, to the patient and sometimes to the surgeon But as the operative and antiseptic details developed, the operations were simplified and the postoperative complications began to diminish and now have almost disappeared. The long courses of preparatory treatment are now unnecessary, and much of the old detail is recognized to be not only burdensome, but detrimental. For want of complications there is not much to be done in the way of after-treatment, although some persist in doing things. Thus the tendency all around has been toward simplicity.

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There is one thing, however, which does not seem to have been sufficiently considered in our discussions, viz, the individual case, or, to put it more concretely, the patient. All cases and all patients are not alike. Every surgeon gives his method but not his case nor his kind of cases. One surgeon has a preponderance of appendix and gall bladder operations, another of intestinal cases, and another of operations on the pelvic organs.

In the case of an exploratory incision through a small incision in the posterior vaginal fornix or over the pubes on a healthy person and without doing more than introduce one or two fingers, it would sound sententious to use the words preparatory and after-treatment. The patient would only require an antiseptic toilet, i. e., to be made clean beforehand, and to have the dressings and sutures removed afterward. But if an emaciated, sallow-faced woman comes to us from a distant town with a large uterine tumor from which she has been bleeding profusely twelve or fifteen days every month for five or ten years, we are not justified in putting her into the hospital and operating on her the same afternoon or the next morning, either with or without the administration of a mild laxative or enema. We would probably take time to make a diagnosis or an attempt at one. We might not consider the time lost in making a urinalysis. If she were bleeding at the time, we might consider it advisable to put her to bed for a day or two and try and check it; or if she were at the end of a profuse menstrual period we might consider a few days of judicious feeding and tonic treatment desirable. We might consider it advisable to make a blood count, and if we found only 40 per cent. of hemoglobin and 2,000,000 red cells, we might deem a few weeks of forced feeding in a rest cure or sanitarium a justifiable preparatory treatment.

After an operation which had necessitated an incision from the pubes to an inch or two above the umbilicus, the separation of adherent adnexa and intestines, and the removal of a vermiform appendix, we might decide to allow her to stay in bed more than one day after the operation. Or if we operate on a case of late postpuerperal pyosalpinx, in which the temperature has remained high, and find the mesosalpinx and broad ligaments infiltrated with pus foci, a case in which we can only save the patient's life by removing the pus tube and draining the pelvis, we may find it necessary to keep the patient in bed for a week or two or three afterward. If there is much postoperative meteorism or gastric regurgitation we may even have to make an early attempt to move the bowels; we may have to give strychnia, liquid diet and other things for several days.

I need not tell you that the first class of cases and the last two should not be treated alike. Yet nearly every one who writes or talks on the subject gives his method as if applicable to all or to a vast majority of cases, instead of saying that his method is adapted to certain cases, and should be modified in the vast majority of cases, and reversed in some. The fact is that time should be taken to inform oneself of the condition of the patient and to correct such pathologic deviations as need correcting, whether it takes a day or a month. Except in emergency cases, a stranger should not be operated on within twelve or eighteen hours after first seen, although that much time might be sufficient for one who had been under observation or treatment for a considerable time.

I will illustrate the application of different methods employed in the after-treatment by comparing three of them, viz., (1) the use of saline cathartics and laxative enemas; (2) the use of opiates, and (3) the avoidance of all medical interference. In the first case cited of an exploratory incision, the non-medical treatment would be ideal; in the second case, that of a uterine fibroid in an anemic patient, an opiate might be desirable; in the third case of pyosalpinx one might find opiates harmful and laxatives desirable or necessary. However, in the first case one might give an opiate and make the patient feel better, or, on the other hand, one might give a laxative enema or a saline cathartic and relieve the discomfort. In the second case, there might be intestinal fulness and distress that would promptly be relieved by the laxative treatment. In the third case, opiates might be used to relieve the distress if there were no signs of over-distention or paralysis of the intestines. Thus we see that different kinds of cases are adapted to different kinds of treatment, and also that the same result may even be obtained in the same case by opposite methods of treatment. With regard to food, one patient recovers rapidly from the anesthetic and has an appetite and normal digestion almost as soon, while another recovers slowly from the anesthetic and has a coated tongue, perhaps a dilated stomach or distended intestines and should be kept on a liquid diet for a few days.

Hence I would say that to recommend a certain kind of treatment either before or after abdominal section is misleading. Each case should be treated differently from the others, for definite deviations from the normal or for the purpose of producing some slight deviation from the normal that will facilitate the surgical work, such, for instance, as reducing the normal intestinal fulness before operations for intestinal resection or anastomosis. On the one hand, we simplify our technic as much as possible, on the other, we individualize the case and do whatever the peculiar condition may indicate. We should stop talking about doing much or doing little, and talk about doing the right thing, the whole right thing, and nothing but the right thing.

In conclusion, I wish to say that the object of these remarks is not to open up a discussion about what is the best treatment, but to depreciate the prevalent tendency to recommend or to condemn methods of treatment indiscriminately.

DISCUSSION.

Dr. Daniel H. Craig, Boston: I think that there should be no routine treatment, and in regard to nourishment following the operation the patient's own condition and own desires in the vast majority of cases are to be taken as a guide. As long as you keep up the maximum of nourishment necessary to the patient's strength, you are doing all that is necessary. On the other hand, if another patient recovers from her anesthetic and the immediate effects of the operation and desires nourishment I think you are doing equal harm if you withhold nourishment, other things being equal. I have followed exactly the same rule with regard to the recumbent position. If one patient feels a disinclination to get up within the first few days after operation, I practically never urge on her the necessity of hastening this in the least. On the other hand, if the patient desires to sit up in bed, feels that the recumbent position is irksome—I am speaking of cases in which the results fulfil expectations—it doesn't make a bit of difference to me whether the patient feels so on the second day or the tenth. I think that one should be guided by the feeling of the patient and one's own knowledge of the patient's physical condition.

DR. RUFUS B. HALL, Cincinnati: The paper is so conservative in its statements that one feels reluctant to discuss it, but I am going to take up one or two points; for instance, the patient who came in from the country with a large tumor in the abdomen bleeding ten to fifteen days in each month. Before he would operate, Dr. Byford said, he might keep the patient in the hospital a day or two until he improved her general condition. My feeling would be that he ought to keep her under observation for a little while, give her preparatory treatment and build up her general health. He should let her have ten or twelve days following her menstrual period to recuperate and then select the best time just before she would bleed the next time to do this operation. He owes that to his patient, the profession and to himself—to put her in the best possible condition to bear the operation she is to have.

In the other case he said he might keep the patient in bed a day or two after the operation. He should do it. He should keep her in bed longer than a day or two. The patient ought not to be permitted to get up in a day or two, in my judgment, even if she wants to.

OBSTETRIC, SEPTIC AND ANESTHETIC TOXEMIAS.*

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Postoperative vomiting of a regurgitant type, first mucous, then bilious, finally brown, grumous and bloody, has been for many years a well known and much dreaded sequel of surgery, and has struck terror to the hearts of many surgeons after the performance of apparently simple and successful operations. The significance was so evident and a fatal result was so often inevitable as to dishearten the most buoyant optimist. Accompanied by slight icterus, relative or absolute suppression of urine, intestinal and gastric distention, tympanites and aperistalsis, it constitutes a pathologic picture long known and dreaded, yet little understood.

ETIOLOGY.

It is only within the last year or two that the true causes which have produced this symptom complex have been generally suspected and a solution of the problem seriously suggested. Even now when we seem to have struck the right lead, little has been done other than to suggest in an indefinite sort of a way that the conditions are due to a toxemia or toxemias to which certain things are contributory as etiologic factors.

This syndrome has been recognized for a number of years in connection with pregnancy as acute yellow atrophy of the liver, and, furthermore, its toxic character has been appreciated; but curiously enough the occurrence of most of the same symptoms, more or less constantly grouped, after surgical operations has failed to suggest to our minds a like toxemia or failure of elimination due to surgical sepsis, chloroform poisoning, or a sapremia resulting from decomposing placental tissue or retained blood clot after abortion or ruptured ectopic pregnancy. I have had the misfortune to see several of these toxemias in cases of ectopic pregnancy and incomplete abortions, and have learned to regard sapremia as a common antecedent of the serious symptoms noted.

Overlooking the significance of the slight icterus, when it has occurrred, and disregarding the urinary suppression, we long labored under the delusion that most of the surgical patients presenting this group of symptoms were primarily victims of what we have been pleased to term intestinal paresis, and we have treated them as such, basing the diagnosis, in the main, on the obstinate and persistent vomiting and aperistalsis or reversed peristalsis; ignoring the underlying causes of the toxemia, such as sepsis, late chloroform poisoning, sapremia, etc.—failing utterly to appreciate the significance of acetone, diacetic acid and even albumin and casts in the urine, and knowing little or nothing of the bearing of the ammonia coefficient.

Certain well-known toxemias of pregnancy present a pathologic picture which resembles very closely these postoperative toxemias. The clinical history and symptoms resemble them closely in most of the important details, particularly in the character of the pernicious vomiting of pregnancy of toxemic origin, as pointed out by Whitridge Williams.

CLINICAL COURSE.

The course of the disease is ordinarily somewhat less acute and virulent as an accompaniment of pregnancy, and its symptoms are, perhaps, more varied. However, the vomiting presents the same general characteristics, and the appearance of the liver at autopsy is much the same as in the toxemias of sepsis, sapremia and late chloroform poisoning.

The characteristic eye symptoms of these toxemias (neuroretinitis and retinal hemorrhages) are more often observed in the toxemias of pregnancy because of the slower and more insidious course of the disease. Yet it can scarcely be doubted that they exist many times without being recognized in the more rapidly fatal postoperative toxemias caused by sepsis or chloroform, and one can scarcely doubt that they would be found much oftener in such cases if they were more often sought.

Grouped and classified simply from the standpoints of symptomatology, urinalysis and autopsy findings, liver diseases of pregnancy, sepsis, sapremia and late chloroform poisoning have many points in common which serve to place them in close relation with each other. Only detailed study of their different phases can determine a further classification and differentiation between them.

In the earlier stages of the disease, these cases are apt to present in common an acidosis of the urine, without albuminuria. It is also probable that the "high ammonia coefficient, indicating that a much greater proportion of the total nitrogen is excreted in the form of ammonia than usual" (Whitridge Williams), will be found to be common to all of these toxic states, as has been demonstrated by Williams in the toxic vomiting of pregnancy. Whether the overloading and overwhelming of the liver, or its inadequacy as a toxin filter is responsible for the toxemia, or the toxemia causes the liver and kidney lesions and produces the inadequacy and consequent failure of function, is as yet unsettled; but medical science is making progress in the solution of the problem, and the indications point to a revision of our former views and teaching in regard to this moot point.

While some of the patients who present this symptom complex of toxemia as a postoperative or obstetric complication may be shown to have had an impaired liver and kidneys which have acted imperfectly as toxin filters and eliminators, many others are apparently healthy and sound until overwhelmed by the profound intoxication, the liver and kidneys giving way and breaking down under the toxic load carried to them by the blood stream. Woods Hutchinson[1] says: "In short, in the pregnant woman, an excess of excretory materials is poured into the blood, and it apparently takes, as it were, but a straw to throw the already overloaded liver off its balance, and set up degenerative changes in it, which result in the rapid accumulation of poisonous products in the blood. It would appear that, here again, as under other conditions, the liver is the principal protector of the body tissues against toxins from whatever source; and that the question of the degree of systemic invasion is largely a question of the degree to which it can rise to the emergency."

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* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

I think most of us have been struck with the curious similarity of the final syndrome in a large percentage of our fatal cases. No matter from what source the poison comes, whether through a pure infection, or an acute poisoning, or a chronic autotoxemia, a very large percentage of our patients die after the same fashion. There is the familiar group of headache, drowsiness, loss of vision, Cheyne-Stokes respiration, increase of expiration over inspiration, coma, convulsions; and death closes the scene. Whether the cause of death is pneumonia, yellow fever, phosphorus poisoning, surgical sepsis, puerperal eclampsia, diabetes, or nephritis, the dying picture is so similar that one can not help being strongly inclined to the belief that death, in all these cases is due, not so much to the original toxin, which destroyed or damaged the particular organ involved, as to the general accumulation in the tissues of the poisonous products of their own metabolism. In fact, to coin an expression, this symptom group stands for "liver failure."

The exact *modus operandi* of the intoxication is as yet undetermined in both the postoperative and the obstetric varieties of the disease. Little that is logical or scientific is known about its treatment except to get rid of the causative factor (pregnancy) in the obstetric variety, to promote the elimination of the poisons through the skin and other channels in all phases of the process, and to add as little as possible to the burden of the overwhelmed organs through the administration of improper food and drugs which are poisonous in this condition.

The one practical point which seems to present itself clearly, and the one to which I desire to call especial attention is the apparent necessity for avoiding the administration of chloroform in any of these cases, whether they be obstetric or surgical; for so much we do know, that chloroform may produce the very condition we are fighting and can only add to the burden of the already impaired organs of elimination.

CHOICE OF ANESTHETIC.

As to a choice between chloroform and ether where some anesthetic must be given, I say without hesitation that I should give the preference to ether in spite of what is said by Hare and others about its being contraindicated and chloroform preferable in such conditions of toxemia with liver and kidney complications. Wherever possible local anesthesia, spinal anesthesia, somnoform or nitrous oxid gas should be substituted for both ether and chloroform. Morphin and codein should also be avoided whenever possible.

OPHTHALMOSCOPIC EXAMINATION.

The diagnostic importance of an ophthalmoscopic examination can not be too strongly emphasized, for in many of the cases it is possible for an expert to make an absolute diagnosis from the appearance of the eye grounds alone, as was done independently and without help from me by Dr. E. W. Stevens in the case of one of my patients who suffered from such a toxemia of pregnancy and who had no albumin in her urine. Likewise, the chemist who made the urinalysis, Dr. E. C. Hill, reported independently the same diagnostic opinion—all of which goes to show the enormous importance of skilled and intelligent collaboration in such cases.

THE URINE.

The urine is primarily and before all else the index to the serious pathologic process and must be regarded as the key to an early differential diagnosis. While its quantity and specific gravity, the presence of albumin, casts, blood or pus are significant, these do not point to the true state of the case as does the existence of a high degree of urinary acidosis with acetone, diacetic and oxybutyric acid, etc., and particularly a high ammonia coefficient, as is insisted on by Whitridge Williams and others.

REPORTS OF CASES.

Of the patients I have seen who have developed these profound symptoms of toxemia, five are of exceptional interest, as they are examples of different pathologic states in which the toxic syndrome was a sequel.

CASE 1.—A married woman, 28 years old, known to be pregnant, had been bleeding from the vagina for a number of days and was thought to be aborting. She was very nervous and had vomited freely when I first saw her. She was sent to the hospital, chloroform was administered, and on examination the uterus was found empty and a mass was felt in the left pelvis. Vaginal incision through Douglas' pouch demonstrated blood and clots in the peritoneal cavity. A rapidly executed abdominal section made it possible to empty the abdomen of the blood clots and tie off and remove the left tube, in which a six weeks' ectopic gestation was found. She was put to bed in good surgical condition, but soon developed restlessness, headache and a shrieking delirium, so that it was necessary to use mechanical restraint. She vomited mucus, bile and grumous blood; was jaundiced and secreted little or no urine, and died in coma on the third day.

The important paper of Bevan and Favill,[2] on the effects of late chloroform poisoning, appeared soon after her death. On reading this paper it became apparent to me that my case was one of those toxemias in which we now know that chloroform is a contributory agent to a fatal termination, for this is the view I prefer to take of these cases rather than to attribute the symptoms solely and entirely to the poisonous effects of the chloroform. I am convinced that the free blood and clots in the abdominal cavity and the antecedent pregnancy were factors in producing the toxemia.

Soon after this I saw in consultation a woman with symptoms of precisely the same kind. She had been delivered at term by an exceptionally capable practitioner, a small amount of chloroform having been given. After eleven days she died with the symptoms of acute yellow atrophy of the liver. The delirium, jaundice, vomiting, urinary suppression, blindness and coma were unmistakable, and at the autopsy the appearance of the liver and kidneys was characteristic.

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[1] The Liver as a Toxin Filter, Practitioner, Lond., November, 1906, p. 583.

[2] THE JOURNAL A. M. A., 1905, xlv, 691.

Case 2.—This patient, aged about 25 years, was sapremic from self-induced abortion, the uterus not having been emptied. She was distended and the tubes and pelvic peritoneum were infected. Operation for emptying the uterus and dealing with the pelvic infection by laparotomy was begun under ether; but as this was not well taken, chloroform was substituted by the anesthetist. The operation was completed quickly and satisfactorily, but the patient soon developed restlessness, vomiting, urinary suppression and jaundice. She became wildly delirious, screaming, fighting and biting, so that she had to be tied down in bed. Coma and death followed two days later. At autopsy the liver was found shrunken, yellow and softened in spots.

Case 3.—A married woman living apart from her husband was seen in consultation. She was past 40 years of age and had several children, though no pregnancies had occurred for more than ten years. She was bleeding from the vagina and having intermittent abdominal and pelvic pains like uterine contractions. She admitted missing three menstrual periods, but strenuously denied the possibility of pregnancy. She confessed to having had great pain during the preceding night and having expelled a "fleshy tumor," which she had failed to save for the inspection of the doctor. At the time of my visit she was icteric and vomiting bile. She had severe headache and was anxious and restless.

On vaginal examination, the uterus was found enlarged and softened, and the os dilated so that a finger could easily be introduced into the uterine cavity. She had the nipple signs of pregnancy.

My diagnosis was incomplete abortion, complicated with toxemia and liver and kidney involvement.

She was sent to the hospital, and so far as possible without an anesthetic the uterus was explored and emptied with the finger and placenta forceps. My irrigation and drainage tubes were introduced, and dilute alcohol irrigations of the uterine cavity were made through the tubes every two hours. She did not become delirious or unconscious, but her face became puffy and her legs edematous, and for eleven days she secreted only a dram or less of urine each 24 hours. This urine was high colored, boiled solid, and was loaded with blood, casts and renal epithelium. It also gave a pronounced reaction for acetone and diacetic acid. The patient died twelve days after I first saw her in coma.

At autopsy, the uterus was found enlarged, softened and partly filled with broken down and decomposing placental débris. The liver was small, markedly yellow and fatty, with many small, softened and necrotic areas. The kidneys presented the characteristic appearance of an acute parenchymatous nephritis.

In this instance the toxic character of the disease was recognized early. Notwithstanding the indications for emptying the uterus it was deemed wiser to accomplish this end only so far as might be possible without the administration of an anesthetic, relying on the intrauterine irrigations of alcohol to arrest the residual placental decomposition and uterine infection. This brings up the perennial question of the use of the uterine curette in such a case; but that is a vexed problem we have no time to consider in this connection, though most of us have very definite views on the subject.

In this case, at least, the toxemia was not complicated and intensified by the administration of chloroform or the elimination interfered with by morphin, nor was the existing overload in the blood stream increased through the administration of nitrogenous or other improper food.

Case 4.—A young woman who came to Colorado for pulmonary tuberculosis was found to have a tuberculous right kidney. The left kidney was sound and doing the physiologic work of both. The right kidney was removed under surgical anesthesia, ether being selected as the anesthetic of choice; but the anesthetist, who makes a specialty of this branch, changed to chloroform during the operation without my knowledge or consent.

The patient vomited inordinately from the time of her recovery from the anesthetic, the vomitus becoming green, then brown, and was regurgitant in type. Slight icterus soon developed. The left kidney secreted amply for the first forty-eight hours, but the quantity gradually diminished until suppression was complete after five days. From the second day acetone and diacetic acid were found in it, and later albumin and casts in abundance. She died six days after the operation. The autopsy revealed the characteristic small yellow liver and an acute parenchymatous nephritis of the left kidney, but no tuberculous disease, though the right kidney was found completely disorganized and riddled with tuberculous abscesses when removed at the operation. The wound of operation was dry and apparently uninfected.

Case 5.—Woman, aged 38 years, pregnant five months. She had lived well for some years and taken her share of a bottle of wine for lunch and dinner. Her life was sedentary. She had vomited almost daily for three months; but the vomiting could not be said to be pernicious or inordinate. When I saw her she was dull and complaining of an intense and unbearable headache with some dimness of vision. The urine was scanty and high colored, *but contained no albumin.* The other constituents of the urine were most significant, however, and clearly pointed to toxemia with hepatic involvement.

Report of Dr. E. C. Hill on first specimen of urine:

Quantity (24 hours), 31 ounces; color, yellow; reaction, slightly acid; sp. gr., 1015; urea, 1.7 per cent.; uric acid, 92 mgm. per 100 c.c.; phosphates, 7¾ per cent. by volume; chlorids, 3 per cent.; inorganic sulphates, 0.7 per cent.; indican, slight excess; bile salts, doubled; ammonia, 2.52 gm. treble normal maximum; albumin, absent; albumose, absent; dextrose, absent; acetone, very marked reaction; diacetic acid, marked reaction; hemoglobin, absent; bile pigment, absent; centrifugal sediment, slight, consisting of mucus, vesical and vaginal epithelium and vibriones.

Rigid diet, cathartics, diuretics and diaphoretics brought about great improvement in her condition, and she was soon well enough to take a carriage and visit the office of Dr. E. W. Stevens for an examination of her eyes. I had told him nothing about her illness, but he wrote me as follows in regard to her: "I have just finished the examination of the eyes of Mrs. X. She gave a history of pain in the eyes and head of five weeks duration. The pain in the head located near the right occipital parieto temporal region had been made worse by a blow in this region. The pain was constant.

"My examination showed a left hyperphoria of 1½ degrees. The refraction under homatropin was R. E. + S. ⊃ + 0.75 cyl.; axis 120°. L.E. + 1.50 S. With this correction the vision was normal.

"The ophthalmoscopic examination showed well marked neuroretinitis in each eye, one small hemorrhage was observed in the right eye, near the nasal margin of the optic nerve. This patient, then, presents three ocular conditions for consideration, viz.: (1) A left hyperphoria of 1½ degrees. (2) A high refraction error. (3) Neuroretinitis. I have ordered glasses correcting the hyperphoria and the error of refraction. The neuoretinitis is without doubt due to toxemia of pregnancy."

Great improvement followed the persistent maintenance of the treatment and diet, and she went along to the twenty-eighth week of pregnancy with comfort. Then, after some dietary indiscretions and relaxation of the eliminators, she again developed intense headache and scanty urine, with much puffiness of the face and ankles, the pulse dropping to 38. The urine was found loaded with epithelium, casts, and blood, and contained 50 per cent. of albumin by volume. Later it boiled solid. A rigid diet amounting almost to a prolonged fast, and forced elimination brought about some improvement in the conditions and she was carried to the thirtieth week of gestation, when a large catheter was put into the uterus, and the vagina was packed with gauze to induce labor. The fetal heart and fetal movement could still be found. After three days, labor having begun, the catheter and gauze were removed, and the cervix was found partially dilated and quite dilatable. The cord became prolapsed. As it was still pulsating and could not be replaced the forceps were applied and a small, under-developed, still-born child was extracted, and the placenta was expressed. No anesthetic was given.

She made a slow but steady and satisfactory recovery. One week after delivery the urine had cleared up to a remarkable degree, the albumin being reduced to a trace and the renal débris markedly diminished.

She had severe headaches for some time and her skin was sallow; but her progress toward restored health was uninterrupted. Her vision is improving and it is hoped that little permanent impairment of her sight will result.

William Hunter[3] says of chloroform poisoning: "According to Guthrie the unknown cause of this idiosyncrasy is a pre-existent and morbidly fatty condition of the liver which reduces the liver to the verge of inadequacy prior to the administration of the anesthetic."

We can scarcely escape the conviction that this is true in many of the surgical and obstetric patients we see with such toxemias as are here considered.

Knowing the late poisonous effects of chloroform as we now do, it is certainly incumbent on us as surgeons and obstetricians to do all in our power to make an early diagnosis of these states through the symptoms, the urine and the eyes; to treat them as intelligently and vigorously as our present knowledge of the subject warrants, and above all else to withold drugs which may accentuate the toxemia or retard the elimination of the toxins.

The high ammonia coefficient insisted on by Whitridge Williams as a diagnostic feature in the toxemias of pregnancy must be conceded to be important. He has done much to establish this point in its bearing on the pernicious vomiting of pregnancy. His conclusions are in accord with what we have long known to be true in other toxemias which present the symptom complex of the inadequacy of the liver as a toxin filter.

Another highly important point is made by William Hunter.[3] He concludes: "The vomiting which occurs after administration of anesthetics is not of nervous origin; but it is, I consider, essentially toxemic, due to the profound depression of liver function with consequent *diminution in its antitoxic function during the period of* the administration. This depression will be the greater if a liver already weakened by disease or poor nutrition be further unduly weakened by food having been withheld for many hours before the administration of an anesthetic, may thus in individual cases be carried too far, and it is, in my opinion, largely responsible for the *effects of delayed chloroform poisoning* in exceptional cases. Such effects could in all probability be completely prevented if, instead of withholding food, particular care was taken that the patient had always a very nutritious and easily digestible meal, well sweetened, two or three hours before operation."

Surgeons, gynecologists and obstetricians can not hope to solve the intricate questions involved in pathologic problems such as are presented by cases like these. The internist, the physiologist, the biological chemist and laboratory worker must tell us how and why these things occur. We can, however, give the results of our clinical experience to aid them and we can aid each other by relating our experiences, suggesting expedients and making known our practical conclusions.

CONCLUSIONS.

So far as one may reach conclusions regarding an unsolved problem, my reading, observation and clinical experience lead me to believe:

1. That toxemias of pregnancy, sepsis, sapremia, late chloroform poisoning, etc., have many common characteristics and from the standpoint of the clinician they may be grouped for study, prevention and treatment.

2. Chloroform may cause such toxemias and liver lesion *de novo*.

3. Chloroform aggravates existing toxemias of the hepatic type.

4. Pregnancy, retained blood and clots of concealed hemorrhage, the sapremia from decomposing placental and fetal débris, sepsis, and the autointoxication of overfeeding and drinking and of coprostasis predispose patients to such liver lesions.

5. Urinary insufficiency with acidosis and a high ammonia coefficient, retinal hemorrhages and neuroretinitis, regurgitant vomiting of the mucous, bilious, grumous type, with or without slight jaundice, and with or without albuminuria, constitute the syndrome characteristic of such toxemias.

6. Albuminuria, when it occurs, may be, indeed often is, late in developing (as in Case 5) and should be regarded as secondary rather than primary, and as a result rather than a cause of the condition.

7. In such toxemias of pregnancy with or without pernicious vomiting the uterus should be emptied at once, but without chloroform, and, if possible, without other anesthesia.

8. Fasting and forced elimination by the skin, kidneys and bowels offer the best prospects for cure after, as well as before, the removal of the cause.

DISCUSSION.

Dr. Bernard Cohen, Buffalo: How would Dr. Wetherill find the high ammonia coefficient in the case of a woman with eclampsia and how would he examine an eclamptic woman's eyes to determine whether she has choked disc? Of course the intestinal contents form the leading cause of all forms of toxemia. The chloroform produces it in a way; but how would the condition be accounted for in a woman who has not had chloroform? The effects of the eclamptic poison on the liver have been beautifully demonstrated by Dr. Ewing of New York. He has a number of specimens showing how the liver is broken down in patients dying from eclampsia. The foci can be seen only with the microscope, but the whole liver is studded with the necrotic spots.

Dr. Henry D. Fry, Washington: Tarnier points out that in all cases of pregnancy there is hepatic insufficiency and that insufficiency is increased by any toxemic condition. We often see the function of the liver still more interfered with. The kidney affection, as Dr. Wetherill has said, is secondary. The first indication of toxemia is sometimes renal insufficiency. Dr. Williams four years ago stated that we should accept the percentage of ammonia coefficient as an indication of when to empty the uterus in hyperemesis gravidarum. The quantity of the ammonia coefficient is not so important in eclampsia. Dr. Williams stated that with the ammonia coefficient increased to 10 per cent. dangerous ground had been reached and that the uterus should be emptied. I thought that a very interesting statement and I tried to follow it. In a case of hyperemesis gravidarum very soon afterward, however, I had to empty the uterus before the ammonia coefficient reached 6 per cent. If I had waited for 10 per cent. the woman would have died. On the other hand, the ammonia coefficient may go to 35 per cent. or 40 per cent. and the woman get well without

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3. Delayed Chloroform Poisoning: Its Nature and Prevention, Lancet, Lond., April 4, 1908, p. 993.

evacuation of the uterus. It was a great disappointment to me to find that this sign, which I hoped would be a good indication, had failed. The only point on which I disagreed with Dr. Wetherill is that I do not attach to the percentage of the ammonia coefficient the same degree of significance that he has attached to it in his paper.

Dr. H. G. Wetherill, Denver: I have no final solution of the problem to offer. It is in a process of evolution and its solution must depend on the members of the profession and their laboratory co-workers. I did not intend to convey the impression that I regarded the percentage of the ammonia coefficient as a sole and final factor which should decide whether or not the uterus should be emptied. Like Dr. Fry, I do not accept the statement of Dr. Williams as the last word in this matter. Probably Dr. Williams himself may be inclined to modify his views later. Taken with other things, however, it has a great deal of significance. I think that the character of the toxemia is indicated much more by the state of the blood and the blood tension as shown in the eyegrounds and otherwise, and I regard the condition of the eyes and the cooperation of an expert ophthalmologist as most important in making the diagnosis and in deciding on the course of treatment to be adopted.

A SUMMER CAMP FOR THE TREATMENT OF SICK BABIES.*

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In the treatment of summer diarrhea in children, artificially fed, it is generally agreed that there are three important requisites, namely, clean milk, fresh air, and intelligent care. It is also agreed that in the prevention of diarrhea the utmost vigilance must be observed during the hot months, particularly in cities. How to provide all these conditions is one of the problems in medicine, the solution of which is imperative.

This paper has to do with the efforts of the Hartford (Conn.) Medical Society to solve this problem in its locality. During the summer of 1907 a camp was maintained in one of the city parks by a committee of the society. This camp was suggested at a meeting of the milk commission of the Hartford County Medical Association. It is easily seen that the production of certified milk is not sufficient alone to materially reduce the high mortality of diarrhea among the children of the poor. The price is prohibitive. Those who can afford to pay fifteen cents a quart for milk can conveniently remove their children to the country or seashore during the hot months. Those who, from necessity, must remain in the city, and can not procure certified or other high-grade milk, are the very poor. Some, it is true, realizing the importance of clean milk, obtain it at the sacrifice of other things, but many can not. It is to reach the latter class of people that the hospital was established. Milk stations and laboratories for distributing certified milk were carefully considered, but it was the opinion of all that the best results were to be obtained by a hospital assuming entire control of a patient, night and day, during his illness.

As a result of this opinion at a meeting of the Hartford Medical Society a committee of ten was appointed with authority to construct and maintain a summer hospital for the care and treatment of sick babies. The committee was given authority to collect money in the name of the society for the support of the hospital. Permission was obtained from the city park board to locate a tent hospital on Riverside Park, and an appeal for money was made through the daily papers.

Riverside Park, as its name implies, is a park on the bank of the Connecticut River. It is not an ideal location for a camp. The park is very largely made ground, somewhat low, and twice a year at least is under water from river freshets. On the east side it borders the river, and on its west is a railroad freight-yard. It was certainly a severe test for the efficiency of an outdoor hospital. This park was selected because of its nearness to the tenement district whose babies it was designed to treat and to whose mothers it was desired to demonstrate that cleanliness for babies, pure milk, and fresh air would accomplish results.

In the construction of the hospital four tents were used. One was a ward-tent thirty feet long and fifteen feet wide, with six-foot side walls and thirteen-foot ridge. This tent held, with some crowding, twenty-four babies. Behind the ward-tent and connected with it by a covered passage, was the diet-tent, twelve by fourteen feet. There the babies' milk was prepared and instruction given to the mothers of the sick children in the methods of handling clean milk and of making simple modifications. Each mother had these instructions before taking her baby home. Behind the diet-tent stood a tent nine by nine feet, containing the boiler which furnished the hot water, and at one side was a tent twelve by fourteen feet used as a nurses' dormitory. All the tents, except the boiler-tent, were floored. The furnishings of the ward-tent were two long tables two feet in width, which held baskets for the babies. Each basket was covered by a hood of mosquito-bar. All woodwork was painted white. In the diet-tent were a sink with hot and cold water, a refrigerator and a table for preparing food for the patients. All the tents were lighted by electricity.

The hospital was opened July 15 with accommodations for twelve patients, and two nurses in attendance. Later twelve more baskets were added and three nurses. Our nurses worked under decided disadvantages. The dormitory as arranged was not practical for sleeping-quarters during the day. A room was provided and meals furnished up-town.

The attending staff consisted of members of the society. There were six attending physicians, a bacteriologist, who kept a careful oversight of the milk supply, and a pathologist. The members of the general committee having the work in charge acted as consultants.

According to Dr. Williams' report as secretary there were treated, up to the closing of the hospital on September 15, sixty babies. The average number per day was twelve; the average length of stay ten days. During the hot periods all twenty-four beds were filled; and on one day in August there were twenty-five patients, and eight were turned away from lack of room. Most of the patients (60 per cent.) came in for summer diarrhea; 30 per cent. were suffering from marasmus or severe malnutrition; 7 per cent. had gastrointestinal indigestion without diarrhea; 10 per cent. had marked rickets; 5 per cent. had pneumonia; while meningitis, malaria, pericarditis and cretinism claimed one case each. The death rate was comparatively low, considering the severity of the cases treated, most of the deaths occurring in cases in which diarrhea was grafted on a previous malnutrition or rickets. There were twenty deaths, or 33 per cent. *mortality*, including all cases. Deducting from this the patients that entered the hospital moribund and died within the first twenty-four hours, the death rate was 18 per cent.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

The expense of the hospital was met by public subscription. According to the report of the treasurer, Dr. Abrams, the total expense was $1,619.01. Of this amount $483.96 was for equipment, tents, plumbing and carpenter work; $271.42 for furnishings, bed-sheeting, household utensils, etc.; $208.42 for maintenance, laundry, telephone and help; $200 for food, including groceries, ice, coal and medicine; $116.20 for nurses' salaries, meals and room, and $35 sundry expenses not classified. Including total cost the average expense per day for each patient was $2.23. Deducting the cost of equipment and furnishings and not allowing for depreciation, which is an unknown quantity, the average cost per day for each patient was $1.15.

The committee feels that the society may congratulate itself on the success of the hospital, and on the interest which it aroused in the community. The well-to-do rallied most cordially to its support and gave help and money freely, and the east side showed its interest by coming to the hospital in such crowds that the tents had to be roped around to protect them.

Such, in brief outline, is the result of our first year's undertaking.

During the present summer the same general plan of work is to be continued as that of last year. There will be added another ward, thus allowing a total accommodation of forty patients. The nursing staff will consist of five trained nurses and five nursery maids. The nursery maids will be trained in the care of babies under ordinary conditions. They will be taught the rules of infant hygiene and the care and preparation of food. The committee also hopes to be able to give to the mothers more adequate demonstrations of the care of milk and bottles.

On account of the increased force of nurses and the difficulties experienced last year in finding suitable accommodations for board and rooms near the hospital, and also the expense and inconvenience of sending out the laundry, the committee has purchased a portable house, to be used as a dormitory, dining-room and kitchen for the nurses, and in which the laundry work can be done.

Our expenses must, of course, be greater than last year.

The committee does not put forward the idea of a summer camp with any claim of originality. In the important work of education and in the alleviation of the sick, this camp simply demonstrates a method which may be employed. It is modest in its construction and inexpensive to maintain. It offers the advantage over regularly established hospitals that it can be erected on any plot of ground where there is a water supply and drainage, and further, it fulfills its function as an object-lesson and means of education better than any isolated hospital can possibly do. It is in the open where those who pass must see its work and its aim.

75 Pratt Street.

DISCUSSION.

Dr. J. H. Mason Knox, Baltimore: I have been interested in work of this character for several years and am glad to see that it is becoming more general. In Baltimore we found that the terrific thunder storms which we sometimes have there made tents impracticable for sick babies. Considering the short duration of time these babies stay in the hospital, there should be trained nurses and physicians to care for the babies when they are returned to their homes. We found at Mount Wilson that unless, after the babies were returned to their homes, we could give them pure milk of exactly the quality we had at the hospital and supply the proper nursing much of our summer work at Mount Wilson was thrown away. If these children can be returned to their homes with a mother who understands better how to care for them and a trained nurse to visit them in their homes and give necessary instructions, the results from the summer camp treatment will be very much better.

Dr. John M. Beffel, Milwaukee: I want to give a little review of the work that is being planned in Milwaukee. A year ago one of the women's clubs became interested in the death rate among children under 5 years of age. The death rate was shown to be 40 per cent. of the total death rate in children under 5 years of age. We had the highest death rate among children under 5 years of any city in the United States outside of Pittsburg. The matter was laid before the city council, which appropriated $3,000 for the erection of a sanitarium or pavilion to be located on the lake shore. It is about 40 feet wide and 80 feet long. It faces Lake Michigan on the east. The main entrance is in the middle, and at the rear of the main floor is the administration room, then a room for nurses, a diet kitchen, an ice-box, a bathroom with a set of six infants' tubs and the lavatory. Then there is a space entirely open and surrounded by a railing. Curtains can be raised in time of wind to protect this space. Hammocks are hung here and ten little cribs placed in the rear. We have already raised by a little work about $1,000 for the maintenance of this work for this summer, the idea being to call the attention of the public to the fact that there is here a vital problem. Let us become awake on this subject and realize that the babies under 5 years of age should be better cared for.

Dr. T. W. Kilmer, New York: The statistics seem to show a strikingly high mortality 33.5 per cent. In New York in our out-patient department our statistics are so much lower than that, that I would like to know if these babies were practically moribund when brought in.

Dr. W. G. Murphy, Hartford, Conn.: I won't guarantee the statistics. We had a very busy summer. Whether they are strictly accurate or not I do not know. But taking them as they are and deducting the cases of patients who came in moribund, we have a mortality of about 18 per cent. It is unfortunate that physicians will unload on us cases in which there is absolutely no hope. If I am not mistaken, the mortality of the floating hospitals is about the same as ours. Only desperate cases are sent to these hospitals; the mortality must be higher than other institutions. Our experience was that we got more money than we needed.

A NEW SIGN FOR THE DETECTION OF MALINGERING AND FUNCTIONAL PARESIS OF THE LOWER EXTREMITIES.

C. F. HOOVER, M.D.

CLEVELAND.

The sign I wish to describe is one which I have employed for the past two years. Although the cases observed number only four, I feel justified in attaching great importance to the sign because it is dependent on a normal function, which I find always exhibited in healthy persons and invariably present in the sound leg of patients suffering from hemiplegia or paresis of one leg due to some pathologic lesion.

If a normal person, lying on a couch in the dorsal position, be asked to lift the right foot off the couch with the leg extended, the left heel will be observed to dig into the couch as the right leg and thigh are elevated. If you place your hand under the tendo Achillis of the left side and sense the muscular resistance offered by the left leg you will observe that the left heel is pressed on to the couch with the same force which is exhibited in lifting the right leg off the couch. In other words, the left heel is employed to fix a point of opposition against the couch during the effort at lifting the right leg. This will always occur if the healthy person makes a free and uninhibited effort to lift the right leg. Of course the opposition offered by the other leg is not essential to a successful elevation of one leg, but if a free effort of the will is made (no matter how slight the effort) the point of opposition made with the leg of the other side is invariably present unless some inhibitory impulse be sent to the opposing leg.

If the movements are carried out in the reverse order the same principle holds true; i. e., if a normal person be requested to press the right leg against the surface of the couch there will be a counter-lifting force exhibited in the left leg.

If a patient suffering from hemiplegia or monoplegia of a leg be requested to lift the extended and paretic leg off the couch it will be observed that the other leg offers the opposition above described whether there is any voluntary muscular strength exhibited or not on the affected side. I have had opportunity to observe this in a large number of hemiplegic patients and the opposition from the normal leg never failed.

If the hemiparetic patient is asked to lift the normal leg off the couch against resistance he will exhibit an opposition with the paretic leg which is directly proportional to the voluntary muscular strength he is able to employ when a display of voluntary muscular power in the paretic leg is exacted.

When the upper extremity is involved this sign is sometimes demonstrable on the normal arm, but at other times it is wanting.

In two cases in which paresis of one leg was claimed by the plaintiffs in suits for personal injuries, there were wanting the characteristic physical signs to sustain the claim of paresis of the lower extremity as the result of injuries. Furthermore, in both of these cases, when the patient was asked to lift the normal leg off the couch, the leg which was alleged to be very paretic was opposed strongly against the surface when resistance was offered to lifting the normal leg. When the patient was requested to lift the paretic leg, there was an apparent attempt to respond to my demand, but the normal leg did not offer the least opposition. The normal leg lay perfectly limp on the couch. Had the paresis been genuine, the sound leg would have been firmly opposed against the surface of the couch when an uninhibited attempt was made to lift the paretic leg.

The absolute lack of complemental opposition from the normal leg was also observed in a case of hysterical hemiplegia, when the patient was requested to lift the paralyzed leg.

In another case of hysterical para-paresis inferior, which was accompanied by abasia, the patient could bow himself into the pose of opisthotonos, but if he was requested to lift one leg off the couch there was no complemental opposition offered by the other leg and the leg which he seemingly attempted to lift would not be raised off the couch.

This sign appeals to me as being particularly valuable for the reason that it depends on the exhibition of a function from the normal leg which must always be present if the patient does not inhibit the normal impulses to the lower extremities.

In the four cases I have briefly described the complemental opposition was entirely wanting. Whether this lack of complemental opposition will always be found or not in malingerers and hysterical subjects remains for further observation to determine. But in view of the fact that complemental opposition is always present in a normal patient and in all patients with genuine paresis and genuine paralysis, we are justified in assuming the existence of cerebral inhibition to an apparent voluntary exhibition of strength when complemental opposition is absent.

If a malingerer were familiar with the object of the examination he could, of course, satisfy the demands of the examiner. In testing for this sign the examiner should seem to fix his attention on the leg which is alleged to be paretic.

In this manner I believe that one will always be able to trick a malingerer or hysterical subject into betraying the falsity of his claim.

I demonstrated the character and significance of this sign to one of the patients described. He promptly abandoned a crutch and cane, an orthopedic corset and blue spectacles and returned to work for the company against whom he had brought suit. The same course was adopted with the hysterical abasic patient. His gait became quite normal after a half hour's persuasion. Whether he later relapsed or not I do not know.

The sign in genuine hemiplegia which Babinski describes[1] for differentiating between genuine and functional hemiplegias depends on the affected side for its exhibition. I have found Babinski's sign unsatisfactory. The fact that this sign of complemental opposition is always present in normal subjects and in genuine paresis of the lower extremity, and the fact that it depends on an invariable function of the normal side gives it a very broad application.

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VENESECTION AND CARDIOVASCULAR AFFECTIONS*

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PHILADELPHIA.

Venesection in cardiovascular affections is referred to by many authors, but it receives scant attention in actual practice. Recently, two physicians in active practice for several years reluctantly admitted at the bedside of a patient that they had never performed a phlebotomy.

That venesection has become neglected is due, first, to inherited prejudice because of its indiscriminate and unjustifiable use years ago, at which time it was the fashion to bleed healthy individuals each spring; second, to the fear that the abstraction of blood would weaken one already diseased; third, to the objection to its use by the laity, who are prone to believe that if death subsequently occurs, it is due to blood-letting; fourth, to a failure on the part of many physicians to recognize clearly the indications and limitations of this procedure, *and fifth, to the erroneous belief* that a small, weak, rapid pulse is an absolute contraindication to blood-letting.

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[1] Brissaud and Souques: Article in Bouchard and Brissaud's "Traité de médicine," ix, 55.

* Read before the American Therapeutic Society, Philadelphia, May 7, 1908.

Usually, venesection in cardiovascular affections is employed as a palliative or as a life-saving measure. As a rule, venesection becomes necessary in conditions in which the patient's life is in jeopardy, so that when performed, even though marked amelioration of symptoms is secured, many deaths eventually occur. Occasionally, however, certain death is averted.

Venesection is especially indicated in certain cases of valvular diseases of the heart with well-marked failure of compensation in which the patient presents extreme dyspnea or orthopnea, cyanosis, tumultuous cardiac action, a rapid, small, feeble pulse, distention of the veins of the head and neck, a feeble apex-beat displaced to the left and seen and felt over a larger area than normal; increase in the area of cardiac dulness to the left and right, and not infrequently accentuation of the pulmonic second sound. Blood-letting is especially indicated if these symptoms and signs are progressive, despite the administration of the ordinary cardiovascular remedies. Under such conditions twenty ounces of blood should be slowly abstracted from the median cephalic vein. If degeneration of the myocardium is not extreme, the relief secured is immediate and satisfactory. Cyanosis disappears, dyspnea diminishes, the overdistended veins become less prominent, the heart becomes stronger and less tumultuous, and the radial pulse increases in strength and volume and decreases in rate.

In these cases a small, weak radial pulse is due to the emptying of the blood from the arterial system into the veins, which produces extreme overdistention of the right auricle and ventricle, preventing their emptying. The right ventricle is often so extremely dilated that its contractions are exceedingly feeble, and the pulmonic circulation is so greatly interfered with that but *a small quantity of blood is delivered to the left heart.* The extraordinary relief of symptoms, however, is often but temporary, although occasionally, in the interval, cardiac remedies are able to produce a favorable effect which before venesection was impossible, so that gradually circulatory equilibrium is re-established and the patient recovers. Exudates in any of the serous cavities should be removed before resorting to venesection.

The cardiac signs and symptoms described may occur late in the disease affecting the mitral or aortic valves.

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In aneurism of the arch of the aorta, dyspnea or pain may be temporarily relieved by the abstraction of eight or ten ounces of blood.

A not uncommon cause of death in acute croupous pneumonia is extreme dilatation of the right heart due to the obstruction in the pulmonary circulation caused by a consolidated lung. When, therefore, the symptoms and signs of right heart dilatation show themselves, venesection to the extent of twenty or *twenty-four ounces becomes not only a palliative measure* of great value, but occasionally saves life. It is important to accentuate that a weak radial pulse in croupous pneumonia, under these circumstances, is not a contraindication of venesection, but on the contrary a strong indication for its performance. In a certain number of these cases, it is most gratifying to observe a gradual progressive increase in the strength of the pulse while blood is escaping from the incised vein, illustrating strikingly the existence of an overfull venous system and a partially emptied arterial system.

Recently several physicians decided that venesection would in all probability hasten death in a case of pneumonia because the pulse was extremely weak. Reluctantly they consented to the abstraction of twenty-four ounces of blood and witnessed an increase in the force of the pulse during the operation, and later restoration of the circulatory equilibrium and recovery.

Certain of the deaths in pneumonia following venesection are due to a cardiac thrombus which had formed in the right heart, while dilatation was at its maximum and prior to blood-letting. In other cases the myocardium was previously diseased, or the toxemia had already produced myocardial degeneration.

The danger of cardiac thrombosis is due not only to the overfilling of the venous system with blood and the slowing of the circulation, but also to the extraordinary increase in the coagulability of the blood in this disease, and therefore venesection should be performed promptly. As soon as early symptoms and signs of right ventricular dilatation show themselves, venesection should be performed, not only to prevent cessation of the heart-beat, but also to prevent cardiac thrombosis.

Rather uniformly hypertension, even to 220 mm. or more, has been observed in uremia and the frequent occurrence of arteriocapillary spasm has been recorded.

It is easy, therefore, to understand why, under these circumstances, sudden and extensive cardiac dilatation may occur, and also why the venous system should contain a relatively greater quantity of blood than normal. These conditions would be favorably influenced by venesection.

It is not within the scope of this paper to consider the relationship of phlebotomy to any other disease, but mention should be made of the benefit observed in certain cases of apoplexy, after blood-letting, by lowering the blood pressure and diminishing the amount of blood escaping into the cerebrum or from the meninges.

317 South Eighteenth Street.

INFECTION OF OPERATIVE WOUNDS BY MALIGNANT DISEASE

I. S. STONE, M.D.

WASHINGTON

The question of most importance in all operative surgery is how to save human life, not only for the time, but to prevent a return of the morbid process whenever this is possible. Certain problems regarding the extension of malignant disease have engaged the attention of physicians for many years, and we have been impressed with the importance of further study of the danger of implantation of cancer and tuberculosis during the time we have a broad exposure of raw surfaces, as during breast and pelvic dissections; as, indeed, any wound may be involved directly, or may be the port of entry of further extension of the disease in question.

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* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

I wish to call attention to certain cases in which carcinoma, sarcoma and tuberculosis have apparently made fresh and rapid extension after operations This immediate invasion appears to indicate a close relation of cause and effect. My observations lead me to suspect strongly that cancer and possibly sarcoma may vary in the intensity with which they attack the tissues. This may be due either to cell activity or to diminished vitality or increased susceptibility on the part of the patient. To illustrate I will briefly report a case of rapid development of carcinoma in an abdominal incision after a Wertheim hysterectomy operation:

History—Mrs. T, aged 38, had a vaginal hysterectomy in 1905 In two years there was a return of the symptoms, and she was found in what we unhesitatingly pronounced an inoperable condition However, at her earnest request, nearly the whole vagina was removed along with pelvic glands which were undergoing softening and contained material resembling pus The operation exposed ureters on both sides, and the vessels down to Poupart's ligament below, and some distance above the pelvic brim In short, we continued the operation until further anesthesia was dangerous.

We felt absolutely sure that we had contaminated the raw surfaces within the pelvis as well as the abdominal incision, because the soft and necrotic glands could not be extirpated without rupture partly owing to their close attachment to the blood vessels In a week we had wound infection with purulent discharge In five weeks we had marked elevation of the upper margin of the right border of the incision This soon developed a crater about half an inch from the skin margin It is unnecessary to say that all attempts to treat this growth failed In perhaps two weeks after the new growth above mentioned had begun, we noticed a much larger area of development on the left side of the incision These two centers continued their development until nearly the whole wound presented every appearance of cancerous growth and this persisted and extended rapidly until the inguinal region was largely involved, and which later on caused the death of the patient, nearly one year after the second operation.

Two operations for tumors of the breast which were thought to have been carcinoma until microscopic examination proved them to have been sarcomata resulted in rapid universal or disseminated metastases. These were fatal in a few months, and were not, as was the carcinoma, retained as a local manifestation. Query: Was the rapid spread of the disease caused by exposing fresh-cut open lymph spaces and vessels?

We have found in one operation for tuberculous uterine adnexa which were suppurating, due probably to mixed infection, that the wound tract had evidence of acquired tuberculous disease. The very poor condition of the patient favored much suppuration, and drainage was continued for seven weeks. The wound tract remained unhealed for twelve or fourteen weeks, a sinus persisting all of this time, and this showed tubercle bacilli until healed. The patient was treated for tuberculosis by the open air and forced feeding method and is now (two years since operation) quite well, having gained twenty-five pounds in weight.

Finally, we suggest as a result of the findings in this case that many of our delayed recoveries are due to similar causes. Besides the very great danger of wound contamination during operations which should be avoided, there is, in certain instances, notably in old cancers, a very rapid systemic invasion which we usually attribute to "mixed infection." Just what this mixed infection is, and what it portends, have not been studied, because such delayed cases are generally considered inoperable. Does the accidental infection of the wound in a breast operation increase the danger of malignant invasion, or the contrary? Finally, if carcinoma and sarcoma are best eradicated by wide dissection, made far beyond the area of suspected disease, would it be possible to prevent immediate infection (with malignancy) by some sterilizing solution or other agent with elective affinity for pathologic conditions, yet which would not destroy healthy tissues nor prevent normal wound healing?

DISCUSSION

Dr H. J. Boldt, New York: It has been my custom for years in all operations for cancer to have the pathologist make serial sections of the surface, from the edges of the specimens removed and to satisfy myself whether or not I had probably done my operation in perfectly normal structure With very few exceptions the report was that the operation was done in normal structures, and yet it is remarkable that in not a small percentage of those cases we did, in less than from one to two years, have recurrence of the disease in the field of operation; that is, in the scar tissue It has struck me that there must be a predisposition, of what nature I do not know, nor do I think any one else knows, on the part of the patient, for recurrence to take place. There is something about carcinomatous patients that makes them likely to have recurrence unless extirpation is made far away from the original site of the disease I do not know of a single instance in which the surgeon in operating for cancer became infected with the disease In the large series of investigations made by Winter, particular attention is called to the vaccination metastases of carcinoma There is so much research work to be done that I hope our pathologic laboratories will be able to throw some light on the subject

Dr H. G Wetherill, Denver It is perhaps not as well understood as it should be by the profession at large and by many operators that benefit may accrue from the use of some of the electrothermic instruments devised for the prevention of implantation and recurrence. I have had a good deal of experience with what is known as the Downes clamp, by which it is possible to do a hysterectomy without ligatures to grasp the base of the broad ligament, close the venous channels and leave few raw surfaces It certainly has very definite advantages. Possibly the members of this Section will remember that the statistics of Byrne, of Brooklyn, were far better in the freedom from recurrence of cancer than others had attained. His results were obtained through the use of an instrument resembling the Downes clamp If the original incision through the vaginal vault is made with the cautery knife and then the broad ligament is clamped on either side there is less risk of implantation and of recurrence

In connection with the cases operated on by Dr. Stone for a tuberculous sinus I might allude to the advantages which accrue from using a vaccine and particularly from the use of tuberculin in these old tuberculous sinuses Of course, the treatment does not apply to cancer, but to various tuberculous lesions in which sinuses occur, such as from the stump of a ureter which it may have been impossible to remove after nephrectomy.

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Dr. G. Betton Massey, Philadelphia: Dr. Boldt made the statement, which is familiar to us all, that we know little about cancer. I submit that Dr. Stone's paper and some other remarks made here this afternoon prove that we know more about cancer than we are acting on. We know enough to believe that it is a microbic disease, not only capable of being sown into the wound by operation too close to the disease, but also capable of being "milked" into the wound. In the ordinary operation of removing a breast or any other large organ watch any operator, if you do not critically watch yourself. How many times is the mass handled and accidentally squeezed by the assistant during the hour to an hour and a half that the operation lasts, without regard to the possibility of the cells being dislodged and implanted in the wound?

Have any present seen that form of recurrence of cancer of the chest called cancer *en cuirasse* that did not follow a knife operation? It may have been by one of the modern operations, but in which the cells were brought into intimate contact with the cut veins and lymphatics, permitting aspiration into the subcutaneous tissues. Whether or not we have found the germ of cancer we must alter our surgical procedures under the assumption that it is a germ disease, and either cut wide of the diseased area and try to prevent implantation, use the electrothermic method, or, still better, the electrochemical method that I have advocated, or in some other way prevent reinfection of the wound. The very criticism I have made of curettement in tuberculosis applies with far greater force to this operation for cancer, yet I fear it is still frequently practiced.

Dr. D. H. Craig, Boston: I rise primarily to suggest an expedient which I have used regularly since a rather unfortunate case, closely resembling that of Dr. Stone, of infection of the abdominal wound. I desire to say first, however, that as a surgeon I can not allow the criticism of surgery which has just been made to go unchallenged. I think that the modern surgeon is not open to the criticism of milking a cancer breast on which he is operating before he severs the lymphatic connection. The method now in vogue of operating on a carcinoma of the breast is to start at the axillary attachment and sever the lymphatic connections downward from that breast before handling it. The breast can then be handled with much greater impunity.

An experience with an infected abdominal wound led me to adopt this technic. The operation was done through an incision sufficiently large not to cause bruising of the wall, for I believe cellular irritation to be one of the most important factors in the development of carcinoma, whether it be by direct trauma as we so frequently see it or by trauma of laceration as seen in the cervix. If we transplant the infection in doing hysterectomy we implant it on an irritated cellular structure which is a favorable site for the growth. My expedient is, after I have completed the operation and am ready to close up the wound, to take an entirely new set of instruments, not hitherto employed in the operation, and cut out all tissue around the incision which may have become infected.

Dr. J. S. Stone, Washington: It seems to me that somebody ought to occasionally point out to us the fact that our beautiful surgery as yet has some defects. Conditions are not quite so bad as Dr. Massey would have us believe, but I think he is interested in another direction. I think, however, that the greatest possible care should be taken in amputation of the cervix and vagina, to close up as far as possible all opportunities for fresh infection. The Downes clamp seals only a certain portion of exposed surface: not one-eighth in the Wertheim operation or even in the ordinary removal of the uterus. In all operations an absolutely aseptic technic should be observed, remembering that the strongest chain is no stronger than the weakest link.

NASAL ANALGESIA AS A PROGNOSTIC SYMPTOM IN DRY CATARRHAL DEAFNESS.*

DUNBAR ROY, A.B., M.D.

ATLANTA, GA.

The question of nasal analgesia in its relationship to so-called dry catarrhal deafness is one concerning which no references are to be found in aural literature, *and one which has never been considered by the majority* of aurists if we may judge from the replies which I received from twenty-five men in various parts of the country, to whom I addressed the following questions:

1. Have you ever noted marked nasal analgesia in persons suffering with so-called dry catarrhal deafness?
2. If so, have you ever noted this as a prognostic sign in the final results of the treatment?
3. Has this symptom been of any value to you in determining the prognosis in these cases?

I received seventeen replies and from no one did I receive an affirmative answer to the last question. Nearly all had noted the condition as existing, but had simply considered it as a natural condition in these cases.

About a year ago I was struck with the fact that many of the patients who consulted me for progressive deafness, presented at the same time a condition of manifest nasal analgesia. I mean by nasal analgesia, a condition of manifest insensitiveness of the nasal mucosa whereby one may accomplish all kinds of instrumental manipulations in these cavities without discomfort to the patient and without the use of any local anesthetic. Since that time I have made it a rule to examine closely for this symptom in every case of a patient applying for treatment suffering with what is usually designated as dry catarrhal deafness.

It is not my intention, even were I able, to consider in this short paper the pathology of deafness, for much is yet to be written and clinically studied before we can know anything definite about this subject. The work of Politzer, Moos, Siebemann, Gruber and others has done much to enlighten us on the micropathology of this condition; but even with this light we seem to be groping in the dark in our endeavors to find some treatment which will be curative in its results. There are a great many problems yet unsolved, whose solution will aid us much in the management of these cases, but until then clinical observation and correlation must make up the sum total, in a great measure, of our knowledge.

I speak of this condition as so-called dry catarrhal deafness, since this term conveys to most of us what is usually meant in these cases, though I am by no means free to admit that this is an appropriate term. One might be justified in using the word catarrhal in those forms of deafness in which there is a discharge from the ear, but in that form in which the pathologic condition is just the opposite, the term seems a misnomer.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

I am fully convinced that the ideas promulgated in text-books and writings of the present day are in a great measure wrong as regards the cause of progressive deafness. By this expression, I do not mean the deafness occurring in children and young adults who suffer with adenoids, for here we recognize the causal relationship, but I mean those cases which creep on insidiously in young adults and in persons of advancing age who have previously shown no symptoms of nose or throat derangement.

Just as the treatment of atrophic rhinitis is the darkest page in rhinologic literature, just so the treatment of progressive deafness is the darkest in that of otology. Our programs are filled with papers on operative procedures in cases of sinus thrombosis and middle-ear suppuration, and yet where we see one case of this condition we see one hundred cases of patients seeking relief for no other condition than annoying tinnitus and increasing deafness. Text-books tell us that the most frequent cause of this form of deafness is a diseased condition of the nasopharynx or the nasal cavities, especially a stenosis of the latter. The patient seeks relief from the aurist and is treated to the same old dose of nitrate of silver to the nasopharynx, sprays to the nasal mucosa, followed by the use of the Politzer bag or the Eustachian catheter and bougie. This stereotyped form of treatment is soon recognized by all patients and they lapse back into the same old condition of pessimism.

Until we recognize the fact that the form of deafness usually attributed to a catarrhal condition of the nose and throat, is itself a distinct entity and its pathology still an unsolved problem, we can never advance to a point where the treatment must be adapted to each individual case. I am sorry that I have no new ideas to suggest as to the successful treatment of these cases, but the point I wish to mention in this paper is the symptom of nasal analgesia referred to and which perchance may prove a valuable point in developing the future management of this condition.

In a few words I will give my observations and deductions on the symptom of analgesia as it has been found in these cases of so-called catarrhal deafness.

What is meant by analgesia as it refers to the subject in question?

All rhinologists are familiar with the fact that the sensitiveness of the nasal mucosa varies with individuals under different conditions of the membrane itself. This may be accounted for on the basis of temperament; the phlegmatic individual being much less susceptible to this sensitiveness than those of nervous temperament. On the other hand, this lack of sensitiveness of the nasal mucosa will be found in varying degrees among patients who suffer from progressive deafness of the dry variety, in the study of which we will often find that it is not due to the temperament of the patient. The analgesia referred to in these individuals is not confined to the nasal cavities, for we also find it present in the ear itself. For instance, what patients with normal hearing apparatus could stand the use of the Lucae probe on the drum membrane or even other instrumental manipulations in this region? That the same pathologic causes which produce this condition in the nasal cavities also acts on the aural apparatus is evident. What these changes are must yet be determined. Branches from the same nerve trunk supply both organs with sensibility and whether or not the same degenerative and hypertrophic condition which exists in the cases of progressive deafness of the middle ear, is also present in the sensitive nerve terminals themselves, must as yet be determined.

I am convinced that this form of progressive deafness is a condition *sui generis* and that the mucous membrane in the nose, nasopharynx, Eustachian tube and middle ear, undergoes the same pathologic changes that are found in the nerve terminals which supply these parts. The more advanced are these changes in the mucosa and nerve terminals, the less favorable is the prognosis for the improvement of hearing. These same degenerative changes also finally take place in the auditory nerve itself as is evidenced by the tuning fork test and the histopathologic investigations of Moos, Politzer, Gruber and others. If then such changes do take place, which fact of course has not yet been conclusively shown, it would certainly seem to follow that a lack of sensibility in the nasal cavities means also a lack of sensibility in the middle and internal ears, with some changes in the auditory nerve itself. Basing the argument on these premises, it would also indicate that the more insensible to irritation a part is the less likely is it to be restored to normal sensibility. This certainly seems to be a law of our physical constitution manifested in various pathologic conditions of the human frame. For instance it is noteworthy how insensible are the nasal cavities in atrophic rhinitis.

These observations of mine and the report which follows must certainly be understood as distinctly preliminary, for it is only to call attention to this symptom and to ask for clinical observations from others that this paper is even presented. It may be that there are some who do not consider this a symptom in the prognosis whatever, but only a natural occurrence. Some may consider it only as a symptom of the temperament of the individual without any reference to its relationship to a diseased condition of the ear. My own conclusions are based on observations noted in twenty-five cases which have been followed for a sufficient length of time to warrant me in placing some value on this prognostic symptom. It is true that this is indeed a small number of cases on which to base a report, but what I have said is in no wise conclusive but is intended to direct others into the consideration of this subject of which no mention has as yet been made and in which there may be possibilities of an important prognostic sign.

Of the twenty-five patients twenty showed the accuracy of this symptom in the final prognosis, while in five it was decidedly uncertain. This symptom may also aid us in directing the line of treatment to those measures which will give more vitality to the nasal and aural tissues and to the nerves which supply their sensibility. Hence the value of potassium iodid in these cases.

In conclusion I can only say that this symptom has proved of decided value to me, for the results of treatment have uniformly been better when there existed a normal or abnormal sensibility of the nasal mucous membrane than when there was a decided symptom of nasal insensibility.

DISCUSSION.

Dr. E. E. Holt, Portland, Me.: I think that the analgesia of the nose is accounted for by inflammatory changes and by age. In manipulations about the eye in the latter part of manhood the sensibility is a good deal less. I have communicated with some dentists who tell me that the mucous membrane of the mouth is very much less sensitive in the latter part of manhood. This subject was brought to my attention by Dr. Burr, whom I have associated with me in work on the physical economic value of man. In establishing the standard man of the different ages, infancy, childhood, youth, manhood, change of life and old age, Dr. Burr notes that all the mucous membranes are less sensitive at the latter part of manhood. You will notice in Dr. Bryant's paper that most of his patients are above 35 or 40. The period of manhood begins at 21 and lasts to about 50. One will notice in manipulating the mucous membrane about the distribution of the fifth nerve in patients of mature years that this membrane is less sensitive than in youth life. I have never seen this hypoesthesia in young persons; it is always in older people and it is caused by inflammatory conditions due to vasomotor disturbances and the changes due to age.

Dr. J. Holinger, Chicago: In chronic suppuration of the middle ear there is a distinct loss of sensitiveness on the drumhead and in the middle ear, which is of prognostic value; but whether in spongification of the capsule of the labyrinth this holds good I am not prepared to say. In making the routine examinations of such an ear the catheterization of the Eustachian tubes often brings tears to the eyes of the patient. Furthermore, it is often necessary to rid the drumhead of scales or wax, and here also the patients give evidence of pain, showing rather the opposite of analgesia. Is there not a possibility that a great number of these patients, simply from sheer force of will power, try to overcome pain in order to give the doctor a chance to do everything in his power to help them? I think that it is more an evidence of will power than of lack of sensitiveness.

Dr. C. F. Welty, San Francisco: I have noted nasal analgesia always as associated with atrophy of the mucous membrane of the nose. I have further noted that ear lesions associated with this condition have been produced by nasal hypertrophy; that the atrophy is one of the later stages of hypertrophy, and that the ear lesions have been produced while in a state of hypertrophy. Furthermore, if otosclerosis happened to be associated with the analgesia it was simply a coincidence, and bore no relation whatsoever to the nasal analgesia.

Dr. Dunbar Roy, Atlanta: I had no reference to the earlier years of life, between the ages of 5 and 20, in which there are so many catarrhal conditions, as wrong tonsil and adenoid conditions, but to the advanced periods of life. It is true, as Dr. Holt has said, that there is this lack of sensibility in older persons, but in the cases I have reference to his theory does not apply. There is a marked difference between various old people of the same age in the amount of sensibility in the nasal mucous membrane. I had no reference to analgesia as a cause of deafness; I simply called attention to the association of this condition with the so-called progressive deafness and the possibility that it may throw some light on the subject of prognosis.

EXPERIMENTS TOWARD A PHYSIOLOGICALLY ISOTONIC SOLUTION OF SALTS.[*]

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The solution that is almost always employed by surgeons and clinicians for irrigations and intravenous injections is the so-called normal saline solution. This is a solution of NaCl in water varying from 0.7-0.9 per cent, in strength and agreeing approximately with the tonicity of blood, that being the only property of blood which at the time that this solution was devised was sufficiently understood to be imitated. Since that time physiologists, for experimental purposes, have vastly improved this solution, taking into consideration the action of other inorganic salts, besides sodium chlorid. Nevertheless, these advances have not been utilized to any considerable extent in practical medicine. Originally this research had for its object the investigation of the possible advantages of using clinically *a solution which conformed more closely to blood* than the ordinary normal saline solution. Saline solutions, such as those of Ringer, Locke and others, which have replaced almost entirely the ordinary sodium chlorid solutions in laboratories of physiology, *conform* more nearly to the inorganic constitution of blood. However, little attention has been paid to other important properties of the blood which until recently have hardly been understood. Among these are:

1. The correct H and OH ion concentration.
2. The capacity for maintaining the proper reaction in spite of increase in acid or alkali.
3. The capacity for the transport of carbonic acid.

In view of this, I turned aside for the present from my original problem in order to attempt such improvements as seemed possible in the light of these recent findings. The present communication is confined to a report of the results of this undertaking.

The practical problem then, in a case like this, is to choose those characteristics of blood which are essential, ensure their proper establishment and to include as many of the other characteristics as may readily be obtained without sacrifice of simplicity of technic and permanency of the solution. The solutions most frequently employed, where a physiologically normal saline solution is required, are solutions of NaCl of such a strength as to be isotonic with the blood. The tonicity has always been considered the essential point. The experiments of Ringer, Locke, J. Loeb and others, have shown the importance of the addition of K and Ca to the saline solution, especially when this was to be employed to maintain rhythmical contractions in the isolated heart. Hédon and Fleig,[1] starting from the assumption that a physiologic solution should correspond as nearly as possible to the blood, prepared a solution which in addition to Na, K and Ca, contained Mg, and phosphoric and sulphuric acid. All these solutions possess also a varying degree of alkalinity due to the addition of $NaHCO_3$. The exact amount of each ingredient varies with the author and, in each case, has been determined empirically. With no other test than the physiologic it is apparent that considerable variations in constitution need not necessarily produce any marked effect experimentally. With the exception of the total concentration, the tonicity, which is more or less definitely fixed, the rules for making up a physiologic saline solution are therefore very indefinite.

However, facts in regard to the maintenance of the proper neutrality and the equilibrium between acids and bases in general, by means of which the CO_2 transport is effected in the animal organism, have recently appeared which, when applied to the preparation of a saline solution, not only give us more definite guides, but make possible the preparation of a solution more nearly like blood than any other so far devised.

The data at hand regarding the concentration of the inorganic constituents of human blood are necessarily very insufficient. The methods for obtaining reliable information require the use of large quantities of blood, and it is, therefore, not surprising that the majority of the determinations have been carried out on the blood of animals. Through the work of Bugarszky and Tangl,[2] Abderhalden[3] and others, we have a fairly complete knowledge of the inorganic constitution and concentration of the blood of a number of the domestic animals, including the horse, cow, sheep, goat, pig, dog, rabbit and cat. It has been found that in its general characteristics, the blood of these animals shows a marked uniformity both as among the various species as well as between the animal blood and the human. Moreover, it is known that the constitution of the blood of the same species, and even of the same individual, is subject to variations at different times which approximate closely to the variations observed in the analyses of the serum of different species.

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[*] Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

[*] From the Laboratory of the Department of Theory and Practice of Physic, and the Laboratory of Comparative Physiology, Harvard Medical School.

[1] Arch. Internat. de Physiol., 1905-1906, iii, 95.

The constitution of the fluid portion of the blood has been obtained by calculation from quantitative determinations of the blood corpuscles and of the serum. As, however, the methods available at present are not of such accuracy as to allow absolute dependence on figures obtained, it was considered wiser to simplify the procedure and to base the calculations for an artificial solution to resemble the body fluids on the figures for the serum, with the full realization that the result would be only a close approximation of the actual conditions. The human serum consists chiefly of water in which are dissolved about 8.5 per cent. solids. These consist mainly of albuminous substances and small quantities of sugar, cholesterin, lecithin and fat, and inorganic bases and acids. These latter are mainly Na, K, Ca, Mg, in combination with HCl, H_3PO_4, and H_2CO_3. By calculation based on the quantitative estimations of Abderhalden[4] of the inorganic content of blood serum the values shown in Table 1 were obtained in grams per liter.

TABLE 1

Na_2O	4.45	Na	3.30
K_2O	0.26	K	0.21
CaO	0.12	Ca	0.08
MgO	0.045	Mg	0.03
Cl	4.0	Cl	4.0
P O	0.07	H_3PO_4	0.09

If these amounts are expressed as chlorids, phosphates and carbonates we obtain the results shown in Table 2.

TABLE 2

KCl	0.40	K	0.21	Cl	0.19
CaCl	0.22	Ca	0.08	Cl	0.14
+6aq	0.4				
MgCl	0.12	Mg	0.03	Cl	0.09
+6aq	0.25				
NaCl	5.90	Na	2.[illegible]2	Cl	3.58
				Cl =	4.00
NaH PO$_4$	0.11				
+1aq	0.126	Na	0.02	H_3PO_4	0.09
NaHCO	3.51	Na	0.96		
		Na =	3.30		

A solution containing per liter the amounts stated in Table 2 has precisely the same reaction as blood and possesses nearly the same power to neutralize both acids and alkalies as shown by Henderson and Black.

The correctness of the reaction was further clearly shown when tested with rosolic acid paper, and agreed fully with the observation made by me on blood and reported in a previous communication.[6]

The monophosphates now constitute about 10 per cent. of the total phosphates and free carbonic acid about 6 per cent. of the total carbonic acid. In other respects the proper relationship between the several acids and bases is automatically adjusted by this method of preparation.

The inorganic constituents being thus properly adjusted it remains to consider the organic. It is evident at once that the proteins of the blood can not very well be introduced into an artificial solution. However, one of the important effects of the presence of colloids in blood, the increase of the viscosity, can very well be brought about in an artificial medium by means of a colloid or colloids that do not coagulate with heat and that are more or less inert, or at least innocuous, in the animal organism. Two such substances are easily obtainable, viz., gelatin and gum arabic. Albanese[7] has shown that a 2 per cent. solution of gum arabic in water has a viscosity closely resembling that of blood and his perfusion experiments convinced him of the importance of this factor. A considerable advantage of gum arabic over gelatin solutions is the fact that the former remains liquid at the temperatures required in the preparation of the fluid. The sugar content of the blood likewise was approximated by the introduction of 0.15 per cent. dextrose.

The effect of the addition of the colloid was remarkable in that it increased the solubility of the calcium salts and apparently held them in solution at a temperature and a CO_2 tension that, without the presence of colloid, caused a precipitate. The solution thus prepared had a freezing point of —.58 C., corresponding to that of human serum, and its osmotic pressure was further tested physiologically by using it to make a suspension of blood cells. The red cells retained their shape perfectly.

In Table 3 I have placed side by side the ordinarily used Locke's solution, the solution of Hedon and Fleig[8] and my own.

TABLE 3

	Locke	Hedon and Fleig		Author
NaCl	0.9	0.6		0.59
KCl	0.025	0.03		0.04
CaCl	0.023	0.01		0.04
$MgSO_4$		0.03	$MgCl_2$	0.025
NaH PO$_4$		0.05		0.0126
NaHCO	0.02	0.15		0.351
Glucose	0.10	0.10		0.15

It will be seen that in regard especially to NaCl, $NaHCO_3$ and NaH_2PO_4 these solutions differ considerably from one another. Locke's solution contains sufficient NaCl to produce an isotonic solution without any further additions. In other words this solution must in most cases be slightly hypertonic. The omission of Mg and P_2O_5 from Locke's solution, while probably not important, certainly does to some extent affect the final equilibrium between acid and base. The $NaHCO_3$ is much too low to obtain the correct reaction. The same is true of the solution of Hedon and Fleig, who on that account probably have kept the $CaCl_2$ so low. The solution suggested in this communication contains a comparatively large amount of $NaHCO_3$ and a small quantity of NaH_2PO_4, which together produce an equilibrium able to maintain the necessary amount of calcium in solution. If the $CaCl_2$ and the NaH_2PO_4 are separately dissolved and mixed with the other substances already in solution no precipitate appears. If all the salts, however, are placed together in the necessary quantity of water a certain amount of calcium phosphate is formed. This precipitate will readily go into solution on passing CO_2 through the liquid. The reaction, however, will become more acid. After the salts are in solution, the excess of CO_2 can be driven off without causing a reappearance of the precipitate.

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[2] Arch. f. d. ges. Physiol., 1898, lxxii, 531.
[3] Ztschr. f. physiol. Chem., 1898, xxv, 67.
[4] Abderhalden, E.: Ztschr. f. physiol. Chem., 1898, xxv, 67.
[5] Am. Jour. Physiol., 1907, xviii, 2[illegible]0.
[6] THE JOURNAL A. M. A., 1907, xlix, 4[illegible]1.
[7] Arch. f. exper. Path. u. Pharmakol., 189[illegible], xxxii, p. 2[illegible]7.
[8] Arch. Internat. d. Physiol., iii, 95, 1905-1906.

Aside from theoretical and practical chemical considerations, it seemed desirable to test the correctness of the solution as a physiologic fluid by experiments with the living organism. The molecular concentration of the fluid, as above stated, was made to approximate that of cat's serum by the addition of 0.15 per cent. NaCl. A number of experiments were conducted to determine how long an isolated cat's heart would beat rhythmically when perfused with this solution. The apparatus used was the one described by Cleghorn.[9] The cat's heart was removed as quickly as possible from the animal, and after it had freed itself of blood in a saline bath, was tied to a canula passed into the aorta just above the coronary orifices. The solution was then forced through the coronary arteries under a constant pressure of 60 mm. of mercury. The whole apparatus was kept at about 35 C.

The results obtained proved that this solution was well adapted to the requirements of a circulating fluid. In one case, under unusually favorable conditions, rhythmic contractions were maintained for 21 hours after the heart had been removed from the cat. No difference could be observed between the solution made up as above and one from which $MgCl_2$ had been omitted, and the NaCl content correspondingly increased. In regard to the viscosity, the solution containing 2 per cent. gum arabic gave rather less satisfactory results than the one without it. This could be explained possibly by the increase in K content of the solution, due to the gum arabic.[10]

It is worthy of note that the best results so far were obtained with those solutions which had no oxygen added. As the water was always freshly distilled, it is not likely that any large amount of oxygen was present, and it is conceivable that the CO_2 content of the solution acted as a stimulus. Furthermore, the solution is capable of holding and removing considerable quantities of CO_2, which, possibly, is quite as important as the presence of oxygen. Several experiments were tried in which the solution was saturated with oxygen and then perfused under oxygen at pressures of from 50 to 80 mm. of mercury. It could not be observed that this caused any more favorable result.

CONCLUSIONS.

While the experiments are as yet incomplete it is, perhaps, not too early to say that the solution described above has certain qualities that recommend it for physiologic use. It approximates blood serum closely in its constitution, in the concentration of its various components and in reaction. It provides a mechanism, on the one hand, for maintaining the reaction, and, on the other hand, for neutralizing acids and alkalies. It provides for the transport of a sufficiently large amount of CO_2. The clinical application of this solution is still under investigation.

It is a pleasure to record my indebtedness to Dr. L. J. Henderson for help in the calculations, and to Dr. W. T. Porter for much valuable guidance as well as for generously placing their laboratory facilities at my disposal.

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[9] Am. Jour. Physiol., 1899, ii, 275.

[10] Locke: Jour. Physiol., 1895, xviii, 332.

Clinical Notes

GANGRENOUS APPENDICITIS COMPLICATING HERNIA.

OCCURRING THREE WEEKS AFTER BIRTH IN A PREMATURE CHILD.

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History.—R. T. was born March 31, 1908, six weeks before the end of a carefully computed term of pregnancy. He was the third child of a physician. His mother and one of his brothers had been operated on for appendicitis. Two weeks after birth his weight was five pounds and four ounces. Considering the circumstances, the child seemed normal and gained satisfactorily in weight. Thus on April 7 his weight was five pounds and two ounces and on April 11 five pounds and eight ounces. Shortly after birth a small reducible tumor was noted in the right inguinal region, the enlargement gradually extending into the scrotum. When the child was three weeks and three days old the father called in a physician, who applied a truss with a small wooden pad, the hernia being apparently thoroughly reduced. The truss was put on about 5 o'clock in the afternoon, and from the first caused the child to become restless and to cry, so that at the end of four hours the appliance had to be removed. The baby, which was breast-fed, refused to nurse, even though it was thought that the source of irritation was no longer present. The mother made repeated efforts to cause the child to take the breast, but after a few minutes it would cease and cry out, and there was regurgitation of the ingested milk. By 7 o'clock in the morning the parents noted a great change in the baby's expression. The fontanelle was distinctly sunken, and the face began to have the hollow-eyed, bluish appearance so characteristic of impending collapse. The hernia could apparently still be reduced, but there remained a slightly indurated mass in the scrotum, and there was some edema of the prepuce.

Examination.—I saw the patient with Dr. Edward W. Perkins just twenty-four hours after the application of the truss. Locally the appearances were as described; the abdomen, however, was rigid and distended, and attempts at physical examination caused straining and crying. The bowels had moved twice and some flatus had been expelled. While I was present the baby had a sinking spell and had to be revived with a little diluted brandy. The temperature was taken and found to be below 96 F. The urine was high-colored, staining the linen.

Operation.—Recognizing that we had to deal with an extremely desperate condition, I advised an immediate operation, being under the impression that strangulation in some form existed. The baby was accordingly removed at once to Mount Sinai Hospital, where I operated an hour later under general anesthesia by chloroform and ether, administered by Dr. T. L. Bennett. By the time we were ready to operate, intra-abdominal tension had still further increased, and the hernia could be with difficulty reduced, so that efforts at taxis were abandoned and the usual incision for herniotomy was made. On opening the sac, a distended coil of large intestine lay before us, constricted at the neck to such a degree that I did not deem it safe to make efforts at replacement until the constriction had been relieved by incision. This was at once followed by a gush of serum amounting to at least three or four ounces, and I was able with ease to reduce the greater part of the hernia. With gentle traction I then withdrew from the scrotal sac the slightly adherent appendix, the distal half of which was black and obviously gangrenous. A single ligature caught the organ at its base as well as the meso-appendix; ablation was performed with the scissors. Gauze packing was held in place by a firm bandage of gauze and then starch, the patient's leg being included down to the foot in the extended position and the bandage still further reinforced by wooden splints. There was no attempt whatever to close any part of the wound. The time of the operation was twenty minutes, and the baby was taken home as soon as the work had been completed.

Bacterial Examination.—Culture from the interior of the appendix showed the presence, even at this early date, of the colon bacillus, in spite of the fact that the child had been breast-fed throughout, and had only on one or two occasions tasted unboiled water. The examination was made at the pathologic laboratory of Mount Sinai Hospital, the culture being examined by Dr. Sophian and the result confirmed by others of the staff.

Recovery.—Six days after the operation the dressing was changed, most of the packing was removed, and the uneventful recovery was complete two weeks from the time of the operation. There was a steady gain of weight from the first until on May 7 the child weighed seven pounds and four ounces. The boy seems to have recovered perfectly, but I am told that there is some colic which comes on fifteen or twenty minutes after each nursing. The stools, however, are free from mucus and are of normal color, frequency and consistency. The mother thinks that the apparently irritant quality of the milk may be due to extraordinary worry in domestic affairs.

The technic followed in this case, namely, treating the wound without suture and by intraperitoneal packing alone was employed by me with equal success in a child operated on about seven years ago in the practice of Dr. Henry Heiman. This patient was only eight days old. There was strangulation of a right inguinal hernia. The operation for its relief was extremely difficult because we feared to give more than the smallest possible quantity of anesthetic, chloroform, and owing to the struggles of the child there was almost complete evisceration. In spite of this the patient recovered and the hernia has not recurred.

It is probable that in the present case when the truss was applied the cecum only was replaced, the pad resting directly on the base of the appendix, interfering with its circulation and giving rise to an amount of traumatism sufficient to cause permanent thrombosis and consequent gangrene which naturally could not be relieved by the removal of the pressure.

TETANY IN AN INFANT FOUR DAYS OLD.

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Conditions associated with tetany have an added interest just now because of the studies of MacCallum, Pfeffer, Mayer, Escherich and others on the parathyroids. The following case is, therefore, instructive:

History of Mother.—A. M., aged 25, was seen June 8, 1908. She had been in the second stage of labor for twelve hours. Her physical condition was excellent except for the presence of a small thyroid enlargement. The goiter was about 12 cm. to the right of the midsternal line. Her pulse never rose above 84. The child's head was on the perineum. The fetal heart gave slight evidence of irregularity during pains, but was about 140 to the minute. About one and a half ounces of chloroform were administered and an unusually large boy delivered, uncorrected weight 14 pounds, corrected weight not less than 9¾ pounds. It was the largest baby I have ever delivered, the average weights of 47 babies in my records being 7¼ pounds, hospital and private practice.

History of Child.—The baby was finely formed, with a sound head and slight *caput succedaneum.* A second degree tear in the mother, required five silkworm sutures. The child was unusually clean when born, with a most curious and unusual bright red scarlatinaform blush over its entire body. Shortly after birth the nurse directed my attention to repeated vomiting of a frothy serum. There were no injuries anywhere: the body, scalp, head and extremities showed no marks of any kind. It slept well and took the breast well. The prepuce was completely closed. This was relieved by circumcision eighteen hours after delivery. There were no nervous symptoms noted during the first, second or third day, although the curious frothy vomitus continued at intervals. He was put to the breast three times each day until the third, when the feedings were brought more closely together.

At birth, although the family history was clean, two drops of 2 per cent. solution of nitrate of silver were instilled as a prophylactic. The next day much pus was present in the left eye, which was also swollen. The pus was examined and contained no gonococci. Boracic acid washings were continued for three days. A red, papillary, exanthematous condition also existed in the mouth, on the tongue and buccal mucous membranes. This did not interfere with nursing, yet the boracic acid was always used before the infant was given the breast. From five to ten black, green and mucoid stools began to pass on the second day.

On the fourth day I called the nurse's attention to the tetany-like movements of the hands, arms and legs of the child. At this time they were scarcely noticeable. She attributed them to some warm sterile water which she had just given the baby. She had not observed them before.

At my second visit on this day the contractures, athetoid tremors (for the amblitude was too small to call them movements) were paroxysmal, the skin alternately wrinkled and tense, some dyspnea and temporary cyanosis. There was no rise of temperature, but the pulse often became uncountable.

From the fourth to the ninth day the typical athetoid movements, extended joints, separated fingers, the thumb contracted on the palm, folded arms and moving elbows made the diagnosis certain.

The convulsions never lacked the movements so distinctive of tetany. The cyanosis grew steadily worse and the pulse often disappeared. Opisthotonos was never present.

Trousseau's and Chvostek's signs were present. From careful external percussion and auscultation the stomach was not dilated. There was no evidence of rickets or history of it in either parent's family.

Cold sponges, warm baths and sodium bromid were of no avail. Ice packs to the spine and head, chloroform and all of the tried remedies failed to keep the infant from passing out. No section was permitted. I arrived two hours after the termination. The body was a bluish black. The body was so perfectly formed, so well molded and well nourished that I could scarcely believe the child dead.

Osler says that tetany is an extremely rare disease. Two years ago he collected 163 cases, including those at Johns Hopkins. He says it bears a definite relation to infections, rickets and gastrointestinal disorders. My patient is perhaps the youngest in the literature.

1. Was the tetany due to an inherited defect of the parathyroid? Such a theory appeals to me because of the mother's goiter.

2. Was it due to boracic acid toxemia? The cord was dressed with boracic acid, the eye was being irrigated with boracic acid, and the mouth was being washed before each feeding with boracic acid.

3. Was there any relation between the nitrate of silver conjunctivitis and the nervous explosions shown as tetany?

4. Was there a hemolysis of the infant's blood from the rich serum of the mother obtained from too frequent intervals of breast feeding during the first days?

5. Was there an infection from the early circumcision which produced the tetany?

6. Was there some gastrointestinal factor due to an unusually rich mother's milk?

7. Did all or any of these causes produce the fatal tetany?

Evidently there was no infection present. The hemolytic theory may be dismissed because the sera are homologous. The absence of a dilated stomach and the precedents in the case of the mother's milk and frequent early feedings, reduce the gastrointestinal factor to a minimum.

I hardly believe enough boracic acid or nitrate of silver could be absorbed to produce a fatal result. There is nothing then left to blame but the parathyroids. The goiter and scarlet rash point to them. Since a section was refused, it is mere speculation.

Next to the diseased parathyroids as a cause, the weight of facts is in favor of the stomach and intestines as a possible cause. The early and frequent vomiting, which increased, and superimposed a diarrhea when frequent feedings began, have led me to feel that I made a grave error in not adopting a starvation policy at the onset of the prodromal symptoms.

1937 Madison Avenue.

PYONEPHROSIS AND CEREBRAL ABSCESS.

WILLIAM P. WILLARD, M.D.
SAN FRANCISCO.

The following case is of interest on account of the supposedly metastatic cerebral abscess being caused by an entirely different organism from that which infected the kidney and also because of the duration and course of the two conditions.

History.—J. N., aged 30, single, bartender by occupation, was at the age of seven run over by a sleigh and the left side of his head was injured. At eighteen he contracted gonorrhea, the discharge of which ceased after about three weeks treatment. Had led an irregular life and had used alcohol freely. Two years ago he began to suffer with pain in the lumbar region and more or less irritation on urination. This had persisted for about a year when I first saw him. At this time I found a well-nourished man of extremely nervous disposition. Nothing abnormal found in heart or lungs, kidneys not palpable and no pain on pressure; prostate enlarged, soft and the secretion full of pus cells. Urine contained nothing abnormal excepting a few pus cells. Cytoscopic examination showed nothing abnormal in the bladder. I treated the prostate for several months, and as the character of the secretion improved he complained less of the pain in his back.

Examination.—On Dec. 1, 1907, he came complaining of severe pain in the left lumbar region. Pressure over the left kidney caused some pain. The urine contained a few pus cells (2 or 3 to the field), as it did on the first examination. I again cystoscopized him and catheterized the ureters. On the left side the catheter could be introduced only about two inches when it met some obstruction, and although the catheter was left *in situ* for some time no urine was obtained. On the right side the catheter was passed just far enough to collect urine for examination. This showed nothing abnormal. Two days later I again catheterized the left ureter, and although I was able to push the catheter to the pelvis, still I obtained no urine. Radiographs showed nothing. An indefinite mass could now be felt in the left kidney region, the palpation of which caused an increased pain. Blood examination showed: December 10, 9,300 white cells; December 14, 11,400; December 19, 11,000. The highest temperature was 100 F.

Treatment.—Dec. 19, through a left lumbar incision I opened a cavity containing about a quart of greenish yellow pus, smears from which showed many red-blood cells, few polymorphonuclear leucocytes, very many short encapsulated Gram-staining bacilli (pneumobacterial infection). Pus drained freely from the wound and also into the bladder. Ten days later the patient had a severe chill, a temperature of 105 F. and a white count of 23,400. On exploring the wound the finger pushed into another cavity containing about half a pint of pus. After this the temperature fell and remained normal until he left the hospital. A few days before the operation the patient complained of pain in the left ear, which disappeared for several days after the operation, when it again recurred. The aurist, Dr. Rosenthal, reported at this time that there was a slight exudate in the middle ear, which disappeared after Politzerization, but nothing to account for the pain. The pain increased in severity, extending from the auricular region, including the left frontal region, and later to the left occipital region. On pressure the pain was not increased, but percussion over the left temporal region was very painful.

Blood examination Jan. 13 showed reds, 4,300,000; whites, 8,200; hemoglobin 90 per cent.; polymorphonuclear leucocytes, 72 per cent; mononuclear leucocytes, 16 per cent.; eosinophiles, 1 per cent. The pain continued with exacerbations, especially at night, until Jan. 25, when the patient against my advice left the hospital.

Subsequent History.—For three weeks I saw him every day and he seemed at first much improved. Not only was the pain in the head less, but also the lumbar wound began to close and he gained a few pounds in weight. Later I noticed he became dull and was slow in comprehending what was said to him. Feb. 15, on going to his lodging, I found him suffering from intense pain over the left side of the head, incontinence of urine and feces, projectile vomiting and inability to move his left arm and leg freely. Temperature, 97 F. The following day the slight paraplegia had disappeared and nothing definite in the localization of the trouble could be found. Rectal temperature for three days was from 97 to 98 F.; pulse, 68 to 80; average white blood count, 13,200. On Feb. 19 I trephined the skull two inches anterior and one inch superior to the left external auditory meatus and introduced a small needle one inch into the brain substance and withdrew pus. The opening was enlarged and a large amount of greenish-yellow pus exuded. Explotation showed a cavity about four inches long by two inches in diameter. Smears showed much granular detritus, few polymorphonuclear leucocytes, few encapsulated Gram-staining bacilli and diplococci; streptococci were present in pure culture. After the operation the patient felt much better and was free of pain for twenty-four hours. The pain recurred and examination of wound showed a great increase of intracranial pressure, so that the brain substance was forced into the drainage tubes, blocking them. They were removed and a small amount of pus exuded from the wound. On attempting to reintroduce the tubes the patient became suddenly unconscious and almost pulseless. By stimulation his condition improved, but a left hemiplegia ensued and twenty-four hours later he died.

Autopsy.—At autopsy the remains of the left hemisphere of the brain was very friable and the meninges over both sides were covered with purulent exudate. The heart, lungs and liver were normal, the spleen enlarged, a fibrous capsule was all that could be found of the left kidney, while the right was greatly hypertrophied.

2672 Pine Street.

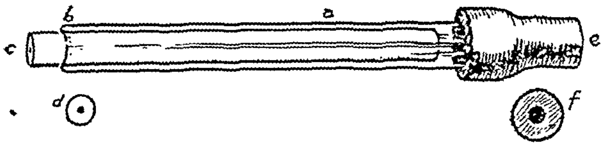
A SIMPLE AND EFFICIENT DEVICE FOR FILLING AND EMPTYING PIPETTES.

G. C. CRANDALL, B.S., M.D.
Professor of Internal Medicine, St. Louis University.
ST. LOUIS.

The device here illustrated I have found so easy to make and so efficient in application that I trust it may be of value to others. The parts consist of a glass tube (a), a medium hard, thick-walled rubber tube (c) with small lumen (d) for a piston, and a soft thick-walled rubber tube (e) with small lumen (f) for connecting the glass tube with the pipette. The piston tube (c) may be a solid medium hard rubber cord if obtainable, and the connecting tube (e) any soft rubber tube, but I have found the parts described very satisfactory. The piston tube here used is abdominal supporter tubing, and the connecting tube is the soft rubber tubing used for the flexible connection of antitoxin syringes. The piston tube should fit the glass tube very loosely before the end of the latter is constricted (b).

To make, cut the parts the desired length, hold the end of the glass tube in the flame until the melting of the glass contracts the lumen at the end of the tube sufficiently to constrict slightly the rubber piston tube when it is introduced; draw a piece of glass in the flame, make two small plugs or beads with which stop the ends of the piston tube, insert the piston tube in the glass tube and connect to the pipette with the soft rubber tube.

To use it, turn and draw out gently the piston tube, which will fill the pipette as gradually as desired, the liquid remaining stationary in the pipette when letting go of the piston tube, making it easy to stop at any desired graduation mark, and the liquid may be forced out or taken in easily and accurately with perfect control of the column of fluid in the pipette when filling or emptying. It can be used with one or both hands. It is easily cleaned, if necessary, by pulling the piston entirely out. The one illustrated will fill a 1 c.c. pipette and it could be made with a greater or less capacity by cutting the parts longer or shorter, or by using larger or smaller glass and rubber tubes. The soft rubber connecting tube is readily connected to pipettes with ends from two to six mm. in diameter. It may be adapted to any pipette in which perfect control of the liquid is desired or to any dropper when accuracy in dropping is wished. I have used it satisfactorily on blood pipettes, tuberculin pipettes and droppers for various purposes.



A device for filling or emptying pipettes or droppers; approximately actual size.—a, glass tube, 7 cm. long, 6 mm. diameter, 5 mm. lumen; b, end of glass tube slightly constricted; c, piston, 8 cm. long, 4 mm. diameter, 1 mm. lumen; d, cross-section piston; e, connecting tube, 2 cm. long, 7 mm. diameter, 2 mm. lumen; f, cross-section of connecting tube.

The special advantages which I have found in this device are its simplicity and cheapness of construction, its adaptability to various pipettes, the ease with which it can be cleaned and the perfect control of the column of liquid which it assures.

4283 Olive Street.

ENDOTHELIOMA OF SCAPULA WITH REMOVAL OF ENTIRE BONE.

JOHN S. McEWAN, M.D.
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ORLANDO, FLA:

Patient.—X., aged 36, a carpenter, married, was first seen Jan. 18, 1908, when he complained of a painful growth on the shoulder.

History.—The family history was negative, there being no history of cancer in the family. He had had malaria and pneumonia, from both of which he recovered perfectly; he had had no other illness. He first noticed the growth about April 1, 1907, when it began as a small lump, "painful from the beginning." It continued to increase in size and the pain continued, and about Nov. 1, 1907, he began to lose weight. During the first part of January he began to have a little fever, felt weak and could not work, so he came to the doctor.

Examination.—Man was of average height, well built and slightly *cachectic.* Examination of the heart and lungs was negative. Pulse, 100; temperature, 99 F.; respiration, 24. There was a tumor on the scapula, with the larger portion below the spine, but covering outer portion. It was round, hard and painful to pressure and measured 10 cm. (4 in.) in the widest diameter and 13 cm. (5 in.) in length. It was firmly attached to the underlying bone. Examination of the urine showed: Reaction, acid; sp. gr., 1020; albumin, slight trace; sugar, absent; a *few hyaline and granular casts:* granular urates and epithelial cells. Blood examination showed: Red cells, 3,500,000; leucocytes, 7,000, and hemoglobin, 60 per cent.

Diagnosis.—The clinical diagnosis was: Probably sarcoma. Microscopic examination by Dr. Martland of the Russell Sage Institute of Pathology, New York, showed an atypical endothelioma. "Many of the lymphatics are plugged with large endothelial cells. *Some places tumor has apparent spindle*-shaped cells simulating sarcoma."

Operation.—This was performed Jan. 25, 1908. An incision was made along the vertebral and spinal borders by the usual technic, tying the main arteries as they were reached. The wound closed by primary union, the patient leaving the hospital in three weeks.

Examination of Tumor.—The neoplasm was round, hard and of straw color; it possessed a thin capsule. A cut section showed jelly-like consistency, with but few blood vessels.

Postoperative History.—The patient has gained to date about 30 pounds. He can use his forearm perfectly and has complete control of the hand movements. His arm is improving all the time and he is holding the position of night watchman.

Therapeutics

CARBONIC ACID.

Dr. Thomas E. Satterthwaite, New York (post-graduate January, 1908) discusses the medical uses of carbonic acid gas. He reminds us that "carbonic acid *is a normal constituent of the body*, entering it as carbon, it is converted by an excess of oxygen into carbonic acid or urea, which in decomposing gives off carbonic acid." It is a normal constituent of the blood, and in arterial blood is about twice as abundant as oxygen, the latter being present in about 20 per cent. by volume. In venous blood there is a still larger amount of carbonic acid, viz., 48 *per cent. by volume.* He states that in arterial blood about all the oxygen present is found in the red corpuscles, while less than 1 per cent. is in the serum; in venous blood the serum contains the largest amount of carbonic acid, while perhaps about one-third is in the corpuscles. "One per cent. of carbonic acid gas in the atmosphere is recognized by its peculiar odor, and is intensely disagreeable to the one inhaling such air, but 3 *per cent.* produces no permanently deleterious effect, while 5 per cent. causes dyspnea and 10 *per cent. narcotism.* Water takes up hardly 3 per cent. of the gas."

Satterthwaite does not discuss the effervescing drinks or the value of effervescing waters from the carbonic acid standpoint, but he describes the advantages of the *carbonic acid baths, especially as used for disturbed conditions of the circulation.* These baths, the so-called Nauheim baths, contain carbonic acid, "which decreases the pulse rate and at the same time regulates the circulation in gout and rheumatism by dilating the capillaries and smaller vessels and by *directly and indirectly* stimulating the nervous centers, while the periphe nerves are soothed." This brings more blood to t surface, and, causing equalization of the circulation, tends to dissipate internal congestions and local congestions and would tend to improve general metabolism. The indication for such baths, then, would be in circulatory insufficiency as in chronic heart diseases, in neuroses, in neurasthenics, in gouty conditions and joint disturbances and in the disturbed metabolism of lithemia or so-called uric acid conditions.

Satterthwaite states that Franzensbad, in Bohemia, is visited by female patients who are sent there for the carbonated bath treatment of inflammations of the pelvic organs. It would seem that improvement of such conditions would be from the general improvement of the health and nutrition, such improvement tending, of course, to lessen a chronic inflammation or induration. "In neurotic patients who have been previously quieted only by drugs these carbonated baths, kept up for hours at a time under the care of a proper attendant, have given great relief without any other form of treatment." The advantages of such treatment of nervously excited patients, as in mania, have been demonstrated at the Manhattan State Hospital for the Insane on Ward's Island, New York.

One of the oldest methods of using carbonic acid gas is the dry plan, and this method has been used in Franzensbad, in Bohemia, where the gas is collected in rooms in which the patients sit in chairs and take the baths without removing their clothing. The gas is, of course, heavier than air, and hence in small amount rises but a few feet from the floor. Patients subjected to such a carbonic acid foot bath soon feel "a tingling in the feet and legs up to the level of the gas and subsequently an agreeable sensation of warmth, due to the dilatation of the capillaries." The water carbonic acid bath, however, adds to the advantage of the warm water, the action of sodium chlorid and calcium chlorid. The action of these slight local irritants intensifies the dilating action of the surface vessels, and there follows such baths a longer continued lowering of the general blood pressure and therefore a greater equalization of the circulation.

Carbonic acid baths may be made at home. The ingredients for such baths are prepared by pharmaceutical firms and may be obtained from most drug stores. The solutions, powders, or tablets, depending on the mixture used, should be placed on a rubber foot pad in the bottom of the bath. These ingredients generally consist of sodium bicarbonate, sodium chlorid and calcium chlorid. Sometimes acid sulphate of sodium tablets with sodium bicarbonate are used for the production of the effervescence. Full instructions come with each package, and generally enough material for twelve baths. A single such bath will cost about 75 cents.

ICHTHYOL.

This is a non-official but much used preparation. It is a chemical combination of ammonium with a sulphonic acid obtained by dry distillation from the bituminous shale found in the Tyrol. This shale contains the remains of fossil fishes. The chemical name is ammonium ichthyosulphonate or ammonium sulphoichthyolate. It contains a great deal of sulphur, and the preparation was brought to the notice of the profession by Unna, and was recommended for external use in skin diseases. It is a thick brown liquid which will mix with oils, fats, and with water.

It is a mild antiseptic and resorbant. When mixed with glycerin or olive oil in from 10 to 50 per cent. it has been applied to boils, indurations, inflamed joints, and to chemically inflamed parts. If frequently painted over a part it may cause blistering, but once or twice painting the skin will cause mild counterirritation. It has been recommended lately as a local application to stop pain in neuralgia. Combined with glycerin (10 per cent.) it makes a valuable vaginal tampon to reduce indurations and inflammations of the pelvis. It has been recommended for all kinds of skin diseases, both as an antiseptic and as a stimulant in chronic inflammations. In acute inflammatory conditions of the skin, as erysipelas and burns, weak solutions have been used with apparent advantage.

Ichthyol has had considerable use internally in pulmonary tuberculosis. Its principal value in these instances is, probably, as an intestinal antiseptic. The appetite often increases and there is less intestinal fermentation, it acting in this manner much like creasote. The best method of administering it for this purpose is with an equal part of water, and, beginning with one drop of this solution three times a day, gradually increase it to ten or more drops. Pills or tablets of ichthyol may also be obtained. The same precaution in using excessive doses should be taken as in using large doses of creasote, viz., that it soon may over-stimulate the gastrointestinal canal and a loss of appetite occur. It is also used internally for acne when this is due largely to intestinal fermentation. It may be ordered in pill form for this condition as follows:

R.	gm.	
Ammonii ichthyosulphonatis		or
Pulveris glycyrrhizæ	3	āā, gr. xlv

M. et fac capsulas 20.

Sig.: One capsule three times a day, after meals.

PERICARDITIS.

The pericardium, like any other serous membrane, may suffer from an acute, subacute or chronic inflammation. There may be only sufficient exudate to produce a dry pericarditis, or there may be an effusion in the pericardium more or less in amount, which is generally serous, though, in rare cases, it may become purulent. From dry pericarditis, or after the absorption, or after the evacuation of the serous or purulent exudate, or from an injury, adhesions may form and a condition of adherent pericardium results.

A primary pericarditis is rare. It is generally a secondary condition either to an acute infection, and most frequently inflammatory rheumatism, or to a chronic condition, most frequently chronic nephritis. The development is often insidious, at times even without pain, and in diseases such as follicular tonsillitis, which may be rheumatic, acute inflammatory rheumatism, chorea, and cerebrospinal meningitis, the heart should be daily examined so that beginning inflammation, either pericardial or endocardial, may be immediately discovered. The pericardial friction murmur is diagnostic, but this pericardial rubbing may not always be painful, and, in fact, may not be the source of pain. When effusion is present pain may be troublesome, showing that it is due to internal disturbance of the heart.

Pericarditis causes but little fever unless it is a complication of some feverish process. More or less dyspnea and cardiac anxiety occur and become marked if much effusion takes place. The heart sounds will become muffled when there is much effusion, and the pulse becomes weak and rapid on the least exertion. If there is much pressure on the heart there is dyspnea and even cyanosis, and the condition is then serious. If the inflammation is prolonged, a myocarditis may develop and the heart may become dilated from the weakening of the muscles. When an enlarged cardiac dulness with cardiac dyspnea is first noted during the course of a chronic disease it is often difficult to diagnose possible fluid in the pericardial cavity from a simple enlarged dilated heart, hence great care should be taken before it is decided to aspirate supposed liquid from the pericardium.

The prognosis of pericarditis as a complication of acute diseases is generally pretty good unless other conditions render the prognosis serious. The pericarditis that sometimes occurs in the latter stages of chronic nephritis is serious and often causes a fatal termination. When there is considerable exudate around the heart there is danger from sudden syncope at any time.

The objects of treatment are: to remove the cause, if possible; to shorten the inflammation, and to prevent or get rid of the exudate. The indications to meet, then, are to treat the cause if we know it, to give as much rest to the heart as possible, to stop pain, to allow no reflex irritation to come from the gastrointestinal canal, and later to remove the effusion.

To meet the first indication we should treat the cause, whatever it may be, as we would if the pericarditis were not present. This is especially true of rheumatism with the precaution of not giving salicylic acid in too large doses or too long, when there is inflammation either of the endocardium or pericardium.

Absolute rest mentally and physically is an imperative necessity, as everything that increases the number of the heart beats increases the irritation of the pericardium. Enough morphin should be given hypodermatically to stop whatever pain is present, and pericardial pain generally requires but small doses. In the beginning of the inflammation an ice bag placed directly over the heart often seems to inhibit the inflammation and to prevent an effusion. As soon as an effusion has taken place the ice bag should be removed. If the heart is rapid, and it has not been injured by a long-continued feverish process which has caused a myocarditis, and if there is no renal or arteriosclerotic reason that digitalis should not be given, it certainly, in small doses, is advisable in pericarditis. If, for instance, a heart is pulsating 100 times a minute and small doses of digitalis reduce this to 80, this means 20 beats less per minute, or 1,200 less in an hour, and 28,800 less in twenty-four hours, which means that much less irritation to the inflamed pericardial membrane.

There is not very frequently sufficient effusion in the pericardial cavity to require paracentesis, but if there is much cardiac anxiety and dyspnea, or if the exudate is large in amount and is not quickly absorbed, aspiration should be done, of course with the greatest possible care. The best point for puncture has not been agreed on by all authorities, some advising that the needle be introduced between the third and fourth ribs at the left margin of the sternum, while Rotch prefers the right fifth interspace, and others advise doing paracentesis exactly in the region of the normal apex beat, the heart, of course, having been displaced by the fluid. Dr. Samuel West, in the *British Medical Journal*, Oct. 26, 1907, gives the safest advice, as far as the heart is concerned, for the withdrawal of pericardial fluid. He advises that the needle be inserted "between the extreme limit of the cardiac dulness in the axilla and the place where the apex is determined to be." It is obvious that the heart itself could not be injured by following such advice. The objection to this position is that the pleural cavity may be punctured and fluid from the pericardium might then be allowed to enter this cavity. West says he has seen such accidents occur, but has never seen any serious results from it.

The patient should be in a recumbent or at least semirecumbent position, this position favoring the sinking of the heavy heart away from the chest wall. The fluid should be drawn very slowly and the pulse carefully watched. A rapid evacuation of the fluid might cause collapse. If the fluid is found to be purulent it must at once be evacuated and a decision then made as to the best surgical methods to be employed.

If death seems imminent from the laboring heart during the course of pericarditis or any other acute cardiac condition, venesection may be not only justifiable but life-saving.

If the amount of pericardial fluid believed by clinical symptoms and signs not to be purulent does not diminish day by day, various methods are used to promote its absorption. Diuretics or diaphoretics are of but little use, and especially the latter are inadvisable on account of their prostrating effect on the patient Daily saline purgatives, not too active, with a diminution of the amount of liquid allowed the patient will generally cause the fluid to be absorbed. At this stage blisters over the heart, small in size and perhaps several in number, seem also to promote absorption. If these methods do not promote absorption and the heart's action is good, either with or without digitalis, the fluid should be removed by aspiration. If an intermittent fever is present without assignable cause, the presence of pus in the pericardium must be suspected and the aspirating needle inserted for diagnostic purposes as well as for the removal of the fluid.

If after most of the fluid has been absorbed and the cardiac dulness has returned to nearly normal but still is larger than it should be, of if friction sounds are heard, or in conditions of dry pericarditis, it is advisable to give small doses of an iodid three times a day for a considerable period. The best preparation is the sodium iodid in a dose of 0.20 gram (3 grains) three times a day, after meals. It is also advisable to paint the precordium with the tincture of iodin once a day for several days, not allowing the skin to become hardened or blistered. Later, rubbing in a small amount of the ointment of potassium iodid is beneficial.

As soon as the acute inflammation is over general tonics and iron in some form, in small amounts, are needed, and as the condition improves the local resolution and absorption are completed. Of course during the acute stage of pericarditis, and for a considerable time after, the bulk of food or nutrition taken should be limited and gastrointestinal indigestion prevented. In other words, it may be found that milk, even during the acute stage, is not a good diet, if it causes gastric flatulence, a coated tongue, and constipation. The kind of diet the patient should receive depends on the amount of temperature.

After the patient is apparently well great care should be taken to prevent any exertion that could cause heart strain, since, as previously stated, the heart muscle is weakened by a pericarditis as well as perhaps by the cause of the pericarditis.

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[*For other information see second page following reading matter*]

SATURDAY, AUGUST 29, 1908.

THE PREVENTION OF COMPRESSED AIR ILLNESS.

Modern engineering activities have made extensive tunneling operations much more common than they formerly were, and submarine tasks by divers and caisson workers multiply in frequency, with the consequence that the serious effects that may follow exposure to high atmospheric pressure are being observed more and more commonly. The very practical question of the best means of avoiding these harmful results is one that interests both physicians and contractors, and the importance of this subject for naval work is such that the British Admiralty appointed a committee on deep diving to investigate the problems arising in this connection. Extensive experimental studies were made and correlated with practical experience, with interesting and important results.[1]

Since the experiments of Paul Bert in 1878 the principal fact concerning the genesis of compressed-air illness or caisson disease has been understood; namely, that it depends on the taking up by the blood and body fluids of large quantities of nitrogen under pressure, and the subsequent liberation of this gas when the abnormal pressure is removed, just as gas escapes from carbonated water when the bottle containing it is uncorked. The nitrogen is taken up not only by the blood, but also by every fluid and cell in the body, especially the fat tissue which Vernon found to absorb six times as much as the blood, a fact which becomes of considerable importance in calculating the time necessary to decompress with safety men who have been working in compressed air. As Paul Bert first pointed out, by very slow decompression all danger of caisson disease can be avoided, and later investigators established as a rule that in decompression a period of twenty minutes should be allowed for each atmosphere. The question of the amount of time required for safe decompression becomes a matter of much moment when men are working under the pressure of several atmospheres in short shifts, for it may require more time for this purpose than they can be engaged in active work, and in deep sea diving for a man to be obliged to spend two or more hours under water while returning from a pressure of six atmospheres or 165 feet, is certainly a severe hardship.

It was in connection with this latter question that the English committee made its extensive studies. It was found that the rate of saturation of the body with nitrogen, under pressure, is much more rapid at first, the amount taken up decreasing rapidly as saturation is approached more and more closely; conversely, desaturation proceeds much more rapidly at first than it does later. The element of time, therefore, enters greatly into the danger of exposure to high pressures, and there is little danger from rapid decompression after exposures lasting but an hour or so. Longer exposures require longer decompression time even when the pressure has been the same.

It is not desirable, however, that the decompression should occur at a uniform rate, as has been usually practiced and recommended. Much better results can be obtained by reducing the temperature rapidly at first to about half the pressure at which saturation took place, and then reducing the rate of decompression gradually toward the end. Uniform decompression has the serious disadvantage of keeping the subject exposed for an unnecessarily long time at a pressure near the maximum, thus increasing the amount of gas to be removed later, while toward the end the rate of decompression is dangerously fast, for the curve of removal of gas is not a straight line since the gas escapes much more rapidly at first than later. Tables have been carefully worked out showing the time necessary for each stage of decompression after various periods of exposure up to ninety pounds in excess of atmospheric pressure; and there is a decided gain in time as well as safety when the decompression is rapid at first and slow in the later stages.

In deep sea diving it is desirable that the time spent at high pressure should be as short as possible; consequently the descent to the maximum depth should be made as quickly as practicable, the time spent at this pressure should never be long, and the decompression should be accomplished by having the diver ascend rapidly to one-half the pressure, and more and more slowly after this point. If a diver were to stay at a depth of 213 feet, where the pressure is 7.5 atmospheres, until his tissues were saturated with nitrogen, the time required for safe decompression would be about five hours; hence it is evident that exposure to great depths can not be long maintained without great danger. Another danger of exposure to great pressures lies in the fact that the amount of oxygen taken up by the body may be so great as to cause oxygen poisoning. By taking these various facts into consideration, abolishing the usual slow descent, making the first part of the ascent rapid and the last part slow, it has been found possible to combine greater safety with a distinct saving of time under water for a given period of working time on the bottom.

Numerous experiments with goats compressed in a chamber devised for experimental purposes, gave oppor-

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[1] The Prevention of Compressed Air Illness, Boycott, Damant and Haldane, Jour. of Hygiene, 1908, viii, 342.

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HOW SUPERSTITIONS ARE REINFORCED.

Every now and then a story appears in the newspapers that is apparently a striking confirmation of some one or other of the old superstitions that still cling to mankind. For the ordinary reader it is scarcely more than an out-of-the-way story. For those who have certain tendencies to believe superstitions and to be affected by them, such stories are often "confirmations strong as Holy Writ" of their peculiar notions. During the past few months a story regarding the number thirteen has been going the rounds with striking effect. It has been contradicted, categorically, but then contradictions never travel so fast or so far as the original story. The incident that forms the basis of the tale is taken from the biography of Sir John Millais, the English painter, and first appeared in the columns of *M. A. P.*, Mr. T. P. O'Connor's London weekly, whose enigmatic title is translated into words as "Mostly About People." According to the biographer, one day at dinner at Millais' house it was discovered that there were thirteen at table and one of the women diners was much disturbed. In order to reassure her, Mr. Matthew Arnold is said to have remarked: "Now the idea is that whoever leaves the table first will die within a year. With the permission of the ladies, then, we shall cheat fate for once. I and these fine strong lads," pointing to two husky young fellows, "will all rise together and I think that our united constitutions will be able to stand the assault of the reaper." According to the sequel of the story as told, Matthew Arnold died six months later, one of the young fellows committed suicide about the same time, and just within the year the third of the trio was drowned on the steamer *Quetta* off the coast of New Guinea.

Millais' biographer adds: "And now what shall be said of these things. The facts are exactly as I have stated them and are only too well-known to many now living." Of course, even if the facts were as stated it would be nothing but a coincidence; and we might expect that a serious writer of biography would be very careful about his facts. According to a correspondent of the London *Spectator*,[1] however, the assertions are all wrong. He says: "The party is said to have taken place in August, 1885. Accordingly Arnold must have died in March, 1886, and the *Quetta* must have gone down about the same time. Everyone knows that Matthew Arnold died in April, 1888, and I have just come across a reference to the wreck of the *Quetta*, by one who lost several relatives in that ill-fated vessel, which gives the year of the wreck as 1890. What could a serious biographer have been about when he allowed his memory to trick him into penning such a piece of circumstantial nonsense? In view of these glaring discrepancies it is allowable to discredit the whole story, however it may have formed itself in the writer's imagination. Arnold knew from about 1868 that his life was precarious and that his end would probably be very sudden. Is it likely that even in jest he uttered such a speech as is here put into his mouth?"

It has seemed worth while to give some prominence to this contradiction because, while we are inclined to think that the influence of such ridiculous superstitions as the supposed malignity of the number thirteen wherever it occurs is dying out, there are many evidences of a gradual more or less unconscious yielding to the forebodings in this matter that would be amusing if they were not so amazing. How few people who are themselves free from the influence of the superstition are aware that many of the large passenger vessels built in recent years have no state room thirteen. Many modern hotels recently erected have no room number thirteen unless the proprietor was absolutely resolved to combat this foolish superstition. The fact is that some intelligent people feel uncomfortable if asked to take room thirteen. Some are so much disturbed that they would go to the trouble of moving to another hotel rather than to take it. Perhaps the climax of absurdity is that some office buildings of fifteen or more stories now being erected have no thirteenth floor. The reason given by tenants often is that some of their clients may have an objection to visiting the thirteenth floor, and so the manifestation of the superstition grows. At banquets in large hotels where the guests are seated at many tables, as a rule there is no table numbered thirteen. This is true even at medical banquets, and at the dinner to Professor Koch given by the German Medical Society at the Waldorf Astoria in New York not long ago: though there were seventy tables none bore the number thirteen. This was not, of course, because of any objection on the part of the physicians or of the committee. The fact seems to be that the hotel has no placard bearing the number thirteen to put on a table, lest it should scare some diners who might be sensitive in this matter.

It is difficult to understand the reasons for the per-

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[1] March 7, 1908.

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[1] The Prevention of Compressed Air Illness. Boycott, Damant and Haldane. Jour. of Hygiene, 1908, viii, 342.

HOW SUPERSTITIONS ARE REINFORCED.

Every now and then a story appears in the newspapers that is apparently a striking confirmation of some one or other of the old superstitions that still cling to mankind. For the ordinary reader it is scarcely more than an out-of-the-way story. For those who have certain tendencies to believe superstitions and to be affected by them, such stories are often "confirmations strong as Holy Writ" of their peculiar notions. During the past few months a story regarding the number thirteen has been going the rounds with striking effect. It has been contradicted, categorically, but then contradictions never travel so fast or so far as the original story. The incident that forms the basis of the tale is taken from the biography of Sir John Millais, the English painter, and first appeared in the columns of *M. A. P.*, Mr. T. P. O'Connor's London weekly, whose enigmatic title is translated into words as "Mostly About People." According to the biographer, one day at dinner at Millais' house it was discovered that there were thirteen at table and one of the women diners was much disturbed. In order to reassure her, Mr. Matthew Arnold is said to have remarked: "Now the idea is that whoever leaves the table first will die within a year. With the permission of the ladies, then, we shall cheat fate for once. I and these fine strong lads," pointing to two husky young fellows, "will all rise together and I think that our united constitutions will be able to stand the assault of the reaper." According to the sequel of the story as told, Matthew Arnold died six months later, one of the young fellows committed suicide about the same time, and just within the year the third of the trio was drowned on the steamer *Quetta* off the coast of New Guinea.

Millais' biographer adds: "And now what shall be said of these things. The facts are exactly as I have stated them and are only too well-known to many now living." Of course, even if the facts were as stated it would be nothing but a coincidence; and we might expect that a serious writer of biography would be very careful about his facts. According to a correspondent of the London *Spectator*,[1] however, the assertions are all wrong. He says: "The party is said to have taken place in August, 1885. Accordingly Arnold must have died in March, 1886, and the *Quetta* must have gone down about the same time. Everyone knows that Matthew Arnold died in April, 1888, and I have just come across a reference to the wreck of the *Quetta*, by one who lost several relatives in that ill-fated vessel, which gives the year of the wreck as 1890. What could a serious biographer have been about when he allowed his memory to trick him into penning such a piece of circumstantial nonsense? In view of these glaring discrepancies it is allowable to discredit the whole story, however it may have formed itself in the writer's imagination. Arnold knew from about 1868 that his life was precarious and that his end would probably be very sudden. Is it likely that even in jest he uttered such a speech as is here put into his mouth?"

It has seemed worth while to give some prominence to this contradiction because, while we are inclined to think that the influence of such ridiculous superstitions as the supposed malignity of the number thirteen wherever it occurs is dying out, there are many evidences of a gradual more or less unconscious yielding to the forebodings in this matter that would be amusing if they were not so amazing. How few people who are themselves free from the influence of the superstition are aware that many of the large passenger vessels built in recent years have no state room thirteen. Many modern hotels recently erected have no room number thirteen unless the proprietor was absolutely resolved to combat this foolish superstition. The fact is that some intelligent people feel uncomfortable if asked to take room thirteen. Some are so much disturbed that they would go to the trouble of moving to another hotel rather than to take it. Perhaps the climax of absurdity is that some office buildings of fifteen or more stories now being erected have no thirteenth floor. The reason given by tenants often is that some of their clients may have an objection to visiting the thirteenth floor, and so the manifestation of the superstition grows. At banquets in large hotels where the guests are seated at many tables, as a rule there is no table numbered thirteen. This is true even at medical banquets, and at the dinner to Professor Koch given by the German Medical Society at the Waldorf Astoria in New York not long ago: though there were seventy tables none bore the number thirteen. This was not, of course, because of any objection on the part of the physicians or of the committee. The fact seems to be that the hotel has no placard bearing the number thirteen to put on a table, lest it should scare some diners who might be sensitive in this matter.

It is difficult to understand the reasons for the persistence and even the spread of the influence of a superstitious dread of this kind, but it is for physicians to recognize its presence and appreciate how much light it throws on the unreasoning dreads that so often preoccupy patients' minds and make them miserable in spite of reason.

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[1] March 7, 1908.

ALCOHOL IN ARMIES

In closing his paper on "The Feeding of the Soldier" read before the section on navy, army and ambulance of the British Medical Association, Major Blackham said: 'The whole question of food values is, so to speak, in the melting pot, and the nation as well as the army may well look to us for a solution of the problem which involves such enormous interests. This is no mere professional or class question, but a matter of supreme economic importance to every nation on the globe."

There can be no doubt that the facilities for doing sound scientific work on such problems as dietetics, the use of alcohol, etc., are much better in organized, disciplined bodies like the army, than is usually the case for civilian observers, because the conditions are more under control and can be more completely adjusted to solve the particular problem. There is some sort of approach, in fact, to laboratory conditions. For this reason Lt.-Colonel Davies' observations on the influence of alcohol in the service are especially valuable. While he holds it proved that alcohol is both a food and a poison (a food being defined as that which can be oxidized within the body into carbon dioxid and water, so producing heat and energy), he insists that as a food there are so many articles of equal or greater value and free from its objectionable characteristics, that it can be regarded as neither necessary nor advisable from a dietetic point of view. He discusses in this regard the findings of Liebig, Perrin, Anstie, Dupre, Parkes and Wollowicz, and the later pronouncements of Atwater and Benedict and Cushny. He then discusses certain special conditions in which the use of alcohol is held by many to be desirable, particularly from a service standpoint, viz., in extremes of heat and cold, under excessive labor, bodily or mental, and during the peculiar fatigues and exposures incident to war. He concludes that alcohol is unnecessary in any form or in any quantity, under any circumstances that may occur in military affairs. He specifically restricts these observations, however, to the ordinary healthy man, leaving the question of its employment in the treatment of the sick as a separate consideration.

Colonel Davies next inquires whether the use of alcoholic beverages by healthy men, which we have seen to be unnecessary, is, under ordinary circumstances, harmful or harmless, and especially as regards military conditions, whether it is to be encouraged, prohibited, let alone or regulated. In reply he adduces the figures referring to the comparative healthiness of abstainers and non-abstainers, for the sixty years 1841 to 1901, obtained from the two classes of the membership of the United Kingdom Temperance and General Provident Institution. These go to show that the consumption of alcohol, even in moderate quantities (as would naturally be the case with the assurers in this society) tends to diminish the expectation of life. While the figures, he says, are hardly sufficient to be conclusive, their significance is so obvious that they demand attention.

When it comes, however, to a question of applying these considerations to service problems, Colonel Davies frankly admits that "as regards military life in ordinary times of peace, the absolute prohibition of alcoholic drinks altogether is not a practicable procedure. What is to be aimed at and what may be effected, is a regulation of their consumption and an encouragement of those men who desire to do without them altogether or who at any rate wish to partake of them in a very moderate amount." Colonel Davies then discusses the canteen question, and, comparing conditions as to alcoholism in the United States army under the present system with those of the armies of Europe, considers that as an economic and reform measure, a controlled canteen is more effective than an attempt at prohibition. He remarks on the continuous increase in the membership of the Royal Army Temperance Association, and cites statistics from 1901 to 1907, in proof of his conclusion that the consumption of alcohol in the British army is steadily diminishing.

THE TUBERCULOSIS CONGRESS

The interest in the International Congress on Tuberculosis to meet in Washington September 21 to October 12, seems to be warranted by the programs of papers to be read before the sections. It is interesting to observe that the titles of the papers indicate that in addition to the valuable contributions of foreign delegates there will be a good representation of American experience and opinion. It should be noted that the section work of the congress is confined to the second week, September 28 to October 3. The first and third weeks will be occupied with the exhibition of objects of interest and educational value in respect to the tuberculosis problem, and with demonstrations and clinics and lectures by eminent foreigners. The possibilities of instruction and profit from these two weeks for the average visitor are not surpassed by the benefit to be derived from listening to the papers before the sections. There will be a tuberculosis exhibition, which is planned to surpass anything of the sort ever attempted. The methods of combating the disease employed in foreign countries and the devices for arousing interest and educating the public will be exhibited. A number of prizes have been offered, five being of $1,000 each and one of $1,500, offered by the Smithsonian Institution. The latter prize is for the best treatise on "The Relation of Atmospheric Air to Tuberculosis."

During the first week of the congress the meeting of the International Conference on Tuberculosis occurs in Philadelphia, at which a number of valuable papers will be read. The program for this meeting was given in last week's issue, page 684. It is also intended to hold meetings in other cities. By these conferences the work of the congress will be considerably extended and its influence will be brought to bear on other communities besides the capital city.[1]

This congress should have a large attendance of persons representing the whole country. It is primarily a medical affair and the physician will be expected to lead here as he must lead in all efforts at the restriction of disease. In addition, however, the eradication of tuberculosis is pre-eminently a sociologic problem. The disease has its roots in the economic evils resulting from a civilization which has reached its high vantage ground too often at the cost of health. Its prevention is not merely medical; it must involve a wise philanthropy as well. Therefore, not only the physician, but the charity worker, the manufacturer, the labor leader and the statesman, may be expected at this congress. From the impressions received at the International Congress on Tuberculosis we may expect a new enthusiasm and a unity of effort that will greatly advance the anti-tuberculosis crusade not only in this, but in every country.

SOILED CURRENCY.

The subject of "tainted money" has already been noticed editorially in The Journal[2] and the possible dangers to health pointed out. That these dangers are obvious needs no saying. The very appearance of much of the currency in circulation suggests contamination and disease. The question of how far the danger is a real one, however, has not hitherto been studied to any great extent by accurate experimental methods, and possibly too much has been taken for granted from mere appearances alone. That this would seem to be the case is rendered probable by a recent investigation reported in the *Popular Science Monthly*[3] by Mr. Warren W. Hilditch of the Sheffield Laboratory of Bacteriology and Hygiene, Yale University. He made a careful study of twenty-four specimens of the dirtiest paper money he could procure from various sources—ticket offices, banks, drug stores and individuals—and examined them with special reference to the bacterial flora. Each bill was carefully washed with sterile salt solution under conditions to avoid air contamination, and the final sediment, after centrifugation, etc., was examined microscopically, cultures made, and inoculation experiments performed. All inoculations gave negative results, and, excepting staphylococci, chiefly *S. albus*, few bacteria were found. The average number found for the twenty-four bills was 142,000, and there seemed to be no connection between the amount of dirt and the number of bacteria present—the cleanest looking bill having next to the highest count (405,000), while the bill that looked the dirtiest had but 38,000. When a bill has been in circulation for some time, he says, and its peculiar glaze has worn off, it collects bacteria readily, independently of the presence of dirt or grease. From his observations, it would seem that the bacteria of paper money are non-virulent and mostly of the air forms. He asks whether the lack of virulence may be due to drying, the bills having a peculiarly dry feeling, or to some antiseptic action of the ink used in the printing, but he did not attempt to investigate this question, confining his attention to the search for pathogenic forms. He quotes, also, Dr. Park of the research laboratory of the board of health of New York City and Dr. Doty, the health officer of the port, and the treasurer of the United States, all of whom give their opinion that the transmission of disease by currency must be rare, Dr. Park stating that he has never found any evidence of the actual transfer of disease through money, though he did find bills capable of carrying living tubercle and diphtheria bacteria for some days. Statements have been made in the secular press of the conveyance of serious disease by paper money, but they lack positive scientific verification. Naturally such proof is impossible in most cases, and this should be taken into consideration. We have even seen a statement that a bank teller who had contracted leprosy was still employed in his occupation, dealing out money. While this may be true, and it is a rather appalling fact, if so, the danger still may be less real than apparent, on account of the deficient viability of the special microbe outside of the animal body. That there is a real danger from soiled money Mr. Hilditch does not deny, but he thinks that the absence of virulent disease germs found by him indicates that it is at least not a common means of the transmission of disease. If it were, those most exposed in handling money, such as bank clerks, would bear evidence of it, at least more frequently than seems to be the case.

HUMAN LIFE A CHEAP COMMODITY.

The carelessness and indifference to human life shown in the repeated occurrence of railroad and car accidents, in reckless driving, particularly of automobiles, in the public distribution of samples of "headache powders" and other poisonous remedies, and in other ways, was signally displayed this week in Chicago. A live wire was left dangling in the street for more than two days after proper warning had been given. The natural result of this criminal negligence is one little girl killed, and her five-year-old brother dangerously burned. Had the ultimate purpose of a coroner's inquest been at tained, instead of a verdict of accidental death, there would have been issued a verdict of culpable homicide against the person responsible for the continuance of this death trap from Friday until Monday.

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[1] A large group of foreign delegates will go to Baltimore on October 5, when a public meeting will be held and an address will be given by Professor Landouzy of Paris. There will be similar meetings in Boston on October 6 and 7, when Dr. R. W. Philip, of Edinburgh, and Prof. Dr. C. H. H. Spronck, of Utrecht, will deliver public addresses. In New York, on October 8 and 9, Dr. N. P. Tendeloo, of Leyden, and Dr. Andres Martinez Vargas, of Barcelona, will give special lectures under the auspices of the Academy of Medicine.

[2] April 18, 1908, p. 1269

[3] July, 1908.

THE TRIUMPH OF SANITATION AT PANAMA.

The redemption of the Panama Canal Zone from preventable diseases receives official confirmation in the report to President Roosevelt of the special commission appointed last April to investigate the work accomplished. The importance of the hygienic problem involved is emphasized by the commission in reviewing the difficulties under which the French labored in their efforts to construct the canal. The report says:

"The terrible scourge of yellow fever against which the French struggled in vain, the filthy and pest-breeding state of the principal Panama towns, the rough labor camps and other pioneer hardships of the first two eras have been eliminated through the brilliant and persistent activity of the department of sanitation, the department of municipal engineering and the building department. To-day we find yellow fever driven from the isthmus, malaria and pneumonia greatly reduced and a high average of health established. Although the government's immediate object on the isthmus is to dig the canal and to provide living quarters for a temporary enterprise, it has, in fact, created comfortable homes and well-organized social communities for its working force."

Modern civilization furnishes no better example than this of the possible victory over pestilence and disease, when the warfare is carried on in the light of modern scientific knowledge. The building of the Panama Canal and the sanitary record of the Japanese in their war with Russia are the two great object lessons of recent years, demonstrating that men can neither work nor fight to the best advantage unless protected from infectious and preventable diseases. The civilized nation which will hereafter put an army in the field or undertake a great engineering problem without first preparing the way by proper and adequate sanitary engineering and equipment will be regarded by the other nations as quite as foolish as a government which would build a vast fleet of modern warships and then arm them with the muzzle loading ordnance of one hundred years ago. An epidemic of typhoid fever in a military camp should be considered a greater disgrace to an army than a defeat in battle, since defeat may come in spite of the greatest exertions and the highest wisdom, while typhoid and yellow fever would be the result of ignorance or disregard of well known laws of prevention. All nations will profit by the sanitary lesson of the Panama Canal.

Anesthesia in the Sixteenth Century.—Stuart McGuire (*Virginia Medical Semi-Monthly*, July 24, 1908, p. 186) quotes the following from Dubartas (A. D. 1592):

Even as a surgeon minding oft to cut
Some cureless limb, before in use he puts
His violent engines in the victim's member,
Bringeth his patient in a senseless slumber;
And griefless then, guided by use and art,
To save the whole, saws off the infested part.

Medical News

DISTRICT OF COLUMBIA.

Health Report.—According to the health and mortality record for the week ended August 15 there were 94 deaths, of which 50 were white and 44 colored. Of the births 103 were white and 68 colored. During the week 33 cases of typhoid fever were reported, an increase of 8 over the previous week.

Annex for Garfield Hospital.—Plans have been prepared for the erection of a new addition to Garfield Hospital, the gift of Dr. Loren B. T. Johnson as a memorial to his wife. The building cost about $35,000, will have a capacity of 60 beds and will be for the exclusive treatment of women and children.

To Register Consumptives.—The health officer is preparing to begin the enforcement of the new law providing for the registration of all cases of tuberculosis. Under the law physicians must report every case within one week after the disease is recognized. Provision is made for the free examination of sputum.

Births Not Reported.—An examination of the records of the health department by the census office shows that only 75 per cent. of the births in the District during 1907 were reported. The health office will endeavor to fix the responsibility for failure to record the remaining births, and it is probable that prosecutions will result.

Personal.—Dr. Joseph Taber Johnson has recovered from his recent serious illness.——Dr. M. G. Motter, chief sanitary inspector of the District, has resigned from the health department to join with the Public Health and Marine-Hospital Service.——Dr. Harvey W. Wiley, chief of the division of chemistry, Department of Agriculture, has been appointed an honorary president of the First International Congress for the Repression of Adulteration of Alimentary and Pharmaceutical Products.

FLORIDA.

Personal.—Dr. Joseph L. Romero has been appointed health officer of Jacksonville.——Dr. Clarence Hutchinson, Pensacola, has received the degree of M.R.C.S. England.——Dr. Warren E. Anderson, Pensacola, agent of the State Board of Health, has gone to Atlanta to receive treatment at the Pasteur Institute.

A Warning.—Dr. Howard Steele Holloway, Jacksonville, writes warning against one H. F. Alphin, who purports to represent the L. D. Johns Company of New York, and who by specious promises and misrepresentation is succeeding in selling stock to doctors. The company he claims to represent says that it knows nothing of the man.

ILLINOIS.

Personal.—Dr. George W. Mitchell, first assistant physician at the Illinois General Insane Hospital, South Bartonville, has started for a year of rest and study in Africa and Europe.——Dr. Charles E. Crawford, Rockford, has been re-elected grand medical adviser to the Sons of St. George.

Hospital Contract Let.—The contract for the building for the new hospital for tuberculosis on the grounds of the Cook County Hospital has been awarded for $222,900 to the lowest bidder. The new building will be five stories in height, 162 feet long, with three wings, each 128 feet long and will accommodate 320 patients.

Want Higher Standards.—At the August meeting of the Galesburg Medical Society resolutions were adopted that the newspapers of the city be requested to refrain from mentioning names of physicians in connection with their professional work; and, furthermore, that a copy of the resolutions, together with a petition, to be signed by the physicians, be presented to the newspapers for publication.

Chicago.

Contagious Diseases.—The cases of contagious diseases reported during the week ended August 21 numbered 187, of which 60 were diphtheria, 41 tuberculosis, 38 scarlet fever, 20 typhoid fever, 8 whooping-cough, 16 measles, 2 chickenpox, and 2 minor diseases.

Personal.—Dr. and Mrs. John B. Murphy will sail from Europe for home on September 12.——Dr. Antonio Lagorio is taking treatment at his own Pasteur Institute on account of infection from a wound from the bone of a rabbit which had been inoculated with rabies.

Tuberculin Test.—The department of health has sent out notices to physicians, worded as follows: "The department of health suggests: Why not use tuberculin and diagnose your case of consumption *now?* *Why wait until there is no hope?* Which policy is best for your patient—for the community—for you? The department will give you the tuberculin."

Deaths of the Week.—During the week ended August 21, 575 deaths were reported to the bureau of vital statistics, 45 fewer than the preceding week and 109 fewer than the corresponding week in 1907. Chief among death causes were: Acute intestinal diseases, 196; consumption, 53; violence (including suicide), 35; nephritis and heart diseases, each 34; cancer, 32, and pneumonia, 27.

INDIANA.

Health Circular.—The Indiana State Board of Health has issued a letter to the people entitled "Why Not Protect the Health of School Children?" In this the importance of pure air and proper heating and ventilation is urged, the evils of air starvation detailed, and the lighting and air supply of schoolrooms considered—all these with the idea, first, of preserving the health of the school children, and, second, of saving the money of the state and increasing the general wellbeing and happiness.

July Disease and Death.—During the past month the order of disease prevalence was as follows: Diarrhea, cholera morbus, dysentery, cholera infantum, tonsillitis, rheumatism, typhoid fever, bronchitis, intermittent and remittent fever, inflammation of the bowels, whooping-cough, scarlet fever, diphtheria, measles, smallpox, typhomalarial fever, pleurisy, pneumonia, cerebrospinal meningitis, influenza, erysipelas, puerperal fever and chickenpox. There were reported 65 cases of smallpox in 13 counties, with no deaths. In the corresponding month last year there were 74 cases in 21 counties with no deaths. Tuberculosis caused 339 deaths and pneumonia 60 deaths. In the corresponding month of last year pneumonia caused 84 deaths. Typhoid fever caused 58 deaths. There were 207 cases reported in 58 counties. In the corresponding month last year there were 312 cases in 64 counties, with 53 deaths. Violence caused 207 deaths, of which 10 were murders, 26 suicides, and 171 accidents.

Personal.—Dr. Edward J. McOscar, Fort Wayne, has returned from Germany.——Dr. Benjamin H. Cook, Anderson, who sued the Indiana Union Traction Company for $20,000 damages, has been awarded $700 by the jury.——Dr. Floyd B. McBride, assistant surgeon at the Marion Soldiers' Home, has resigned, and will be succeeded by Dr. Lloyd B. Campbell.——Dr. Jay D. Nusbaum, Auburn, has been appointed surgeon to the Toledo & Chicago Interurban Railway.——Dr. Harry C. Sharp, surgeon at the Indiana Reformatory, Jeffersonville, has resigned, to take effect October 1.——Dr. Henry G. Linn, Rushville, has been taken to the East Haven Hospital, Richmond, for treatment for cholelithiasis.

IOWA.

Bequest.—By the will of the late Senator Allison $1,000 is bequeathed to the Finley Hospital, Dubuque.

Hospital Staff Elects Officers.—The medical staff of Cottage Hospital, Creston, has elected the following officers: President, Dr. Frank E. Sampson; vice-president, Dr. J. W. Lauder; and secretary, Dr. Charles A. Beattie.

Communicable Diseases.—The epidemic of smallpox at Mason City is said to have been stamped out, the last patient having been discharged from the detention hospital.—Rockwell reports an epidemic of typhoid fever.

Pollution of Waterways.—At the annual meeting of the State Board of Health in July, resolutions were adopted that a committee of five be appointed to draft a statute to be presented to the next legislature, requiring that all cities, towns or communities purify their sewage so as to render the effluent harmless.

Society Meeting.—The Austin-Flint-Cedar Valley Medical Association, at its sixth annual meeting, held in Clear Lake, elected the following officers: President, Dr. Ernest J. Waddey, Waterloo; vice-president, Dr. Michael J. Kenefick, Algona; secretary and treasurer, Dr. Claude F. Osborn, Hampton; and censor, Dr. Henry H. Clark, McGregor. The association will meet in Hampton next year.

Decision Against Physicians.—In the damage suit of Mrs. Annie Arp for $45,000 against Drs. Alphonse L. Hageboeck, Julius T. Haller and J. H. Meyhaus, Davenport, in which the allegation was made that the death of the plaintiff's husband was caused by leaving a sponge in his body after an operation for appendicitis, and in which the jury twice disagreed, a settlement is said to have been arrived at by which Mrs. Arp receives $4,500.

Senior Students Get Diplomas.—The three students of Drake University Medical Department who started mandamus proceedings to compel the authorities to grant them diplomas are to receive them. These students had taken a two years' course in an osteopathic college and two years in the medical college, and the president of the latter refused to give them certificates. The state board, however, is said to have made a special ruling in their favor.

Personal.—Dr. Alexander M. Linn, Des Moines, has been elected president of the State Board of Health, vice Dr. Joseph H. Sams, Clarion.——Dr. A. P. Hanchett, Council Bluffs, has been elected president of the State Board of Medical Examiners.——Dr. J. B. B. Hudson has been appointed first assistant state bacteriologist.——Dr. Robert Evans, Fort Dodge, returned from Europe August 18.——Dr. Lawrence W. Littig, Iowa City, who has been seriously ill with blood poisoning, is reported convalescent.——Dr. Matthew U. Cheshire, Marshalltown, has been appointed surgeon to the Marshalltown Light, Power and Railway Company.——Dr. Gabriel G. Bickley, Waterloo, is reported to be critically ill with pneumonia.——Dr. Andros Guede, Des Moines, has returned from Vienna.

KANSAS.

Against Flies.—The department of food and drugs of the Kansas State Board of Health has issued a leaflet entitled "Swat the Fly."

Postgraduate Course.—The faculty of the Kansas Medical College of Topeka has decided to open a postgraduate or clinical course during the week preceding the opening of the college term in September. This course is especially planned for the benefit of the alumni of the school.

Personal.—Dr. Henry M. Lankford, superintendent of Evergreen Place Hospital, Leavenworth, Kan., has been visiting his old home in Princess Anne, Md.——Dr. Edith S. Haigh has moved from Iola to Madison, Wis.——Dr. Samuel J. Crumbine, Topeka, chief food inspector of the state, has been commissioned federal food inspector by the Secretary of Agriculture.

KENTUCKY.

Verdict for Physician.—In the damage suit of Mrs. Sarah Daugherty, Elizabethtown, against Dr. Argus D. Willmoth, Louisville, in which it was alleged that the defendant had left in the body of the plaintiff a sponge and other foreign matter, the jury brought in a verdict for the defendant.

Sanitarium Incorporated.—Dr. Milton Board, Hopkinsville, member of the State Board of Control, has filed articles of incorporation for a sanitarium with capital stock of $10,000. The stockholders are Drs. Milton Board, Arthur T. McCormick, Bowling Green; James T. Windell, Louisville; Joseph McWilliams and Charles H. Moorman.

New City Hospital Planned.—The committee appointed to consider plans for the new City Hospital at Louisville has reported in favor of a sectional structure consisting of six pavilions, each containing two wards, with accommodations for 450 patients. Concrete is recommended as the material of construction, and the estimated cost of the structure is from $600,000 to $700,000.

Graduation Exercises.—At the commencement exercises of the Medical Department of the University of Louisville a class of 99 received diplomas. The salutatory was delivered by Dr. Thomas C. Maguire. Dr. Joseph M. Boyden presented the graduates to the chancellor of the university, Dr. J. C. Willis, who conferred the degrees.——At the fifty-eighth annual commencement exercises of the Kentucky School of Medicine a class of 47 was graduated.——At the annual commencement exercises of the Louisville and Hospital Medical College a class of 102 received diplomas. Rev. W. Francis Irwin delivered the doctorate address.

Personal.—Dr. J. M. Mathews has returned to the city after a six weeks' visit to Atlantic City, N. J., and White Sulphur Springs, W. Va.——Dr. W. L. Nuttall, Newcastle, has been appointed superintendent of the Feeble-Minded Institute, to succeed Dr. Alexander Bailey of Bailey's Mills.——Dr. Daniel J. Healey has been appointed pathologist to the Eastern Kentucky Asylum, and Dr. Louise Healey, his wife, has been appointed third assistant physician of the same institution.——Dr. Florence Meder has been transferred to the Central Kentucky Asylum at Lakeland, as third assistant physician.——In recognition of his fifty-two years of practice in Kentucky, Dr. Davis J. Foster, Paducah, has been presented with a gold-headed umbrella by the physicians of the city.——Dr. Frank Boyd, Paducah, has been appointed surgeon general of the state guard.——Dr. William T. Merchant, Louisville, has been appointed city physician for the indigent colored population.——Dr. B. Frank Eckman, Covington, was painfully injured in a collision between his automobile and a railway train, July 29.——Dr. Stanislaus Brzozowski has been appointed superintendent of the Louisville Eruptive Hospital, vice Dr. J. L. Whittenberg.——Dr. Joseph M. Stuart has succeeded the late Dr. James P. Heavrin as president of the board of health of Owensboro.

MARYLAND.

Homicides.—Since 1885 there have been 441 homicides in Baltimore, an average of 18 per annum.

Baltimore Personal.—Dr. Robert Hoffmann has returned from Germany.——Dr. James E. Harris sailed for Germany August 19.

Health Bulletins.—The last of the weekly health bulletins of the Medical and Chirurgical Faculty of Maryland were on "Ptomain Poisoning" and "Baths."

New Emergency Hospital.—The Emergency Hospital building commission at Annapolis has asked for bids for the new hospital in that city, to cost about $25,000, the amount appropriated by the state.

Improvements at Quarantine.—Extensive improvements are being made at the Baltimore quarantine by Dr. Thomas L. Richardson, assistant health commissioner. Among these are the installation of a new water system, a gas plant and baths.

July Deaths in Baltimore.—Dr. J. F. H. Gorsuch, health officer of Baltimore County, reports that during July there were 186 deaths, among which were 16 from tuberculosis, 15 from accident, 8 from cerebral meningitis, 7 from typhoid fever, and 3 from suicide.

Protest Against Division of Authority.—Dr. E. N. Brush of the Sheppard and Enoch Pratt Hospital, and Dr. Charles F. Bevan, dean of the College of Physicians and Surgeons, Baltimore, have entered a protest against the proposed division of authority at the Springfield Asylum for the Insane. Dr. Brush says: "The conduct of a hospital for the insane under dual management is universally condemned by those whose experience and knowledge entitle them to express an opinion. Such an arrangement is bound to result in friction and in disputes as to authority or responsibility, and this condition of affairs inevitably results in harm to the patients." The dual management of the asylum is believed to be advocated on the ground of economy.

MASSACHUSETTS.

Contribution to Hospital Fund.—The members of the Boston Curb Exchange have contributed $1,000 to the fund of the Boston Floating Hospital.

Typhoid at Newburyport.—Dr. William H. Coon of the State Board of Health has been investigating the numerous cases of typhoid at Newburyport. The milk and water supplies are to be looked into.

Personal.—Dr. A. F. Story, Natick, who has been critically ill for the past six weeks, is reported to be improving.——Dr. Herman Cooper, Amesbury, who has been seriously ill with cardiac involvement, is improving.——Dr. Joseph H. Pratt, Boston, has returned home from Europe.

Salem Health Crusade.—The Salem board of health has inaugurated a health crusade and has issued a rule requiring all meats, poultry, fish, dates, figs, berries and shelled nuts, when exposed for sale in the open air, be covered so as to exclude flies and dust. It is understood that one of the main objects is to regulate the exposure of fish for sale.

MICHIGAN.

Issue of Health Bulletin.—The State Department of Health of Michigan has issued for its July and September bulletin a pamphlet on the summer diarrheas of infancy and their restriction, which deals with such topics as the care and dress of infants, fresh air, foods and drugs, and "patent medicines."

July Vital Statistics.—During July there were reported in the state 151 cases of measles, 110 of typhoid fever, 96 of scarlet fever, 78 of smallpox, 75 of whooping-cough, 69 of diphtheria, 52 of pneumonia, and 32 of meningitis. In all these cases of dangerous communicable diseases the number of cases reported was markedly lower than the average from 1904 to 1906.

Tuberculosis Notes.—The Grand Rapids Tuberculosis Sanatorium is now filled to its entire capacity of 25. The Anti-Tuberculosis Society of Grand Rapids is to furnish free clinics, which will be held from 12 to 1 o'clock either three or six times a week. Drs. Collins H. Johnson, Ralph H. Spencer, Alden H. Williams, Thomas M. Koon, J. D. Hastie, Abel J. Baker, and Henry J. Vandenberg make up the attending staff.——On July 21 the Houghton County Anti-Tuberculosis Society celebrated Blue Star Day, the wearing of the star meaning that the individual had helped in the fight against tuberculosis.——The board of health of Holland has passed an ordinance prohibiting expectoration on the sidewalk on penalty of a fine from $5 to $50.

MINNESOTA.

Force Paroled.—Dr. Jacob F. Force, Minneapolis, who was convicted of grand larceny and sentenced to serve three and a half years in the penitentiary, is said to have been paroled August 7 by the state pardon board.

Society Meetings.—At the annual meeting of the Wabasha County Medical Society, held in Lake City July 9, the following officers were elected: Dr. Lawrence C. Ingram, Zumbro Falls, president; Dr. Charles J. McGuire, Minneiska, vice-president; Dr. William F. Wilson, Lake City, secretary-treasurer; Drs. Emery H. Bayley, Lake City, J. Thomas Asbury, Wabasha, and Ernest A. French, Plainview, censors; Dr. William T. Adams, Elgin, delegate to the State Medical Society, and Dr. William J. Cochrane, Lake City, alternate.——At the annual meeting of Freeborn County Medical Society, held in Albert Lea, Dr. Gustav W. Barck, Albert Lea, was elected president; Dr. John P. Freeman, Glenville, vice-president; Dr. Olaf E. Rodli, Albert Lea, secretary, and Dr. John P. von Berg, Albert Lea, treasurer.——At the annual meeting of the Southern Minnesota Medical Association, held in Owatonna, August 6, the following officers were elected: President, Dr. Osmon F. Way, Claremont; first vice-president, Dr. William S. Wood, Blooming Prairie; second vice-president, Dr. Hugh F. McGaughey, Winona; secretary-treasurer, Dr. William T. Adams, Elgin. Winona was selected as meeting place for 1909.

MISSISSIPPI.

Smallpox.—Smallpox in virulent form is said to be epidemic in the Franklin neighborhood, Holmes County, where it has been necessary to close a negro school.——Three cases of smallpox were discovered in Meridian, July 27.

Graduation Exercises.—At the end of the second term of the Mississippi Medical College, Meridian, a class of 13 was graduated. Dr. William W. Hamilton, president of the college, told of the work the college had accomplished and hoped to accomplish. Dr. Nathan L. Clark, dean of the college, spoke of the history of the college and its outlook; Rev. William Mercer Green delivered the annual address, and Mr. Edwin McMorris awarded the diplomas.

Personal.—Dr. John R. Tackett, Meridian, has resigned as member of the State Board of Health, to take effect immediately.——The office of Dr. J. M. Clarke, Wingate, and contents, were destroyed by fire recently.——Dr. Julius Crisler, Jackson, has resigned his position on the staff of the Mississippi Insane Hospital.

MONTANA.

Society Changes Name.—The Silver Bow County Medical Association on July 24 filed notice of its change of name to Silver Bow County Medical Society.

New Hospital.—The Tong building, Big Hole Basin, has been remodeled by Dr. Sweet and opened as a private hospital, with accommodations for six patients.

Compulsory Vaccination.—The State Board of Health has issued an order providing that each pupil, teacher and janitor in every school in the state shall be vaccinated forthwith.

Personal.—Dr. Thomas J. Murray, Butte, was the guest of honor at a banquet given by the Silver Bow County Medical Association, June 20, in honor of his election as first vice-president of the American Medical Association.——Dr. E. M. Porter, Fort Benton, has been appointed county physician, vice Dr. J. Harris Russell.

Vital Statistics.—The July bulletin of the State Health Board states that during the month there were 473 births, 244 males and 229 females, and 330 deaths. The births were 143 in excess of deaths. The bulletin lays special stress on the mortality of young children and its avoidance, the increase in the number of cases and death from tuberculosis and the necessity of efficient meat and milk inspection.

NEBRASKA.

Licenses Revoked.—The supreme court is said to have affirmed the decision of the district court of Lancaster County, whereby the licenses of Erick Munk and Daniel G Walker, Lindsay, were revoked The State Board of Health ordered the licenses revoked on the ground that these men had been guilty of performing criminal operations.

NEW YORK.

Still Wage War Against Noise.—The citizens of Morris Heights have complained about the noise at Fort George, and the board of health has issued an order that all amusement devices be closed at 11 o'clock at night Since the crusade has been on many more complaints have been received in regard to noises, and it is believed that permanent results will be obtained

Better Conditions Along the Croton Watershed—Dr Thomas Darlington, after a tour of inspection, announces that the conditions along the Croton watershed are much better than they were last year The work on the sewer system for Katonah which was authorized by the last legislature is progressing so that soon every possible danger to the water supply of New York City will be removed

Richmond Rid of Mosquitoes—After five years of experimental work with mosquito extermination, Staten Island is practically free of the pest and Dr. Doty has to send to other places for insects for experimental work The number of cases of malaria has decreased proportionately, only three being reported and two of these being off shore Dr Doty states that neglect will undo the work that he has accomplished The filling in will be used with ponds and smaller pockets, and the ditches must be kept open

Northern New York Health Officials Organize—The Northern New York Health Officials' Association has been organized with the following officials President, Dr J H Durham, Cape Vincent vice presidents, Drs Stephen A Russell Fulton, Howard A Bassett, Lowville, and *Benjamin W Severance*, Gouverneur, and secretary, Dr Albert L Morgan, Dexter It is to hold quarterly meetings, and all members of boards of health and health officials in its territory are eligible to membership The objects of the association are educational That the members may be more thoroughly instructed in sanitary science, that they may acquire a more perfect understanding of the health laws of the state, and that they may gain a clear conception of the powers, duties and responsibilities of health officials, and also such officers as citizens

New York City.

Personal—Drs Darlington and Walter Bensel continue to receive letters threatening their lives if the slaughter of unmuzzled dogs is not stopped——Dr Mary Crawford, who is doing ambulance service in Brooklyn, was attacked by an insane man, who attempted to hurl her from the ambulance Her face was badly lacerated by his finger nails

To Hold Meeting in New York—The Playground Association of America will hold its second annual congress in New York during the week of September 7 *President Roosevelt* is honorary president, and Dr Luther H Gulick, president The meeting will be held in the American Museum of Natural History and the program will include addresses by Governor Hughes, Jacob Riis, Superintendent Maxwell and Dr Woods Hutchinson

Contagious Diseases—There were reported to the sanitary bureau for the week ended August 15, 443 cases of tuberculosis with 160 deaths, 134 cases of diphtheria, with 11 deaths, 106 cases of measles, with 5 deaths, 87 cases of scarlet fever, with 7 deaths, 124 cases of typhoid fever, with 17 deaths 18 cases of whooping cough, with 5 deaths, 5 cases of cerebrospinal meningitis, with 7 deaths; and 9 cases of varicella, a total of 926 cases and 212 deaths

Death Rate Lowered Again—The death rate for the week ended August 15 was at the annual rate of 15 74 per 1,000 For the corresponding week of last year it was 20 16 per 1,000 The number of children under 5 years of age who died was 559, against 824 last year Deaths of children under one year of age were 331, as compared with 478 for the same week last year This falling off in the death rate is attributed to education due to newspaper publicity, to better food supply, to more rigid inspection, and to the scarcity of money which forbids harmful luxuries in the way of food and overeating

Protest Against Slaughter of Dogs—The president and attorney of the Society for the Prevention of Cruelty to Animals registered an emphatic protest at the meeting of the health board against the wholesale slaughter of dogs It was stated that during July more than 7,000 dogs had been taken up, and only about 2 per cent had been reclaimed This meant that about 6,000 dogs had been killed It was admitted that the board of health had killed over 1,000. Dr Walter Bensel presented a letter that he had received threatening him with death if the slaughter of unmuzzled and unleashed dogs was not immediately discontinued It was stated that the policy of the board would not be changed until the Society for the Prevention of Cruelty to Animals could show itself capable of coping with the situation

Against Tuberculosis—Hundreds of thousands of transfers, bearing on their backs the following warning against tuberculosis, were distributed through the street car lines August 23

> CONSUMPTION IN EARLY STAGES CAN BE CURED
>
> Take your case in time to a good physician or to a dispensary and you may be cured—DO NOT WAIT
>
> Consumption is 'caught' mainly through the spit of consumptives
>
> Friends of Consumption—Dampness, Dirt, Darkness Drink
>
> Enemies of Consumption—Sun, Air Good Food Cleanliness
>
> If you have tuberculosis, do not give it to others by spitting, even if you have not set a good example by refraining from a habit always dirty and often dangerous
>
> THE COMMITTEE ON THE PREVENTION OF TUBERCULOSIS OF THE CHARITY ORGANIZATION SOCIETY
>
> SUNDAY, AUG 23 1908 (By Courtesy of Siegel Cooper Co)

A Plan for Hospital Reform—The commission appointed by the mayor in January, 1906, to plan for the reorganization, extension and administration of the hospital system in New York City, has just presented its report to the mayor in which it is stated that the public hospital facilities are bad and that the ambulance service is in a chaotic condition, and the commission recommends that the charter be amended to provide for a department of public hospitals administered by a commission appointed by a board of trustees This new department should also have charge of the public ambulance service It is recommended that the commissioner of health should be a member of the proposed board of trustees The report recommends the extension of the sanatorium at Otisville new buildings at Blackwell's Island early completion of the Sea View Hospital on Staten Island the more rapid extension of the public hospital system of the city the extension of the general facilities of the City Hospital expediting work on the new Bellevue Hospital, and many other needed improvements

NEW JERSEY.

Personal—Dr James Curts Paterson, was seriously injured in an automobile accident at Hackensack, August 2

Scarlet Fever at Collingswood—Scarlet fever is epidemic at Collingswood and 14 new cases of this disease were reported during the week ended August 15 The contagion is thought to exist in milk bottles which are taken from house to house without being properly sterilized The board of health is investigating this matter

Vital Statistics—*During the month ended July 15,* 2 589 deaths were reported to the bureau of vital statistics The prolonged warm weather was no doubt responsible for the high death rate among infants, persons aged 60 years or over and others whose vitality is low The number of deaths of children under one year of age for the month is 607, and of persons 60 years and over, 668, a total of 1 375 During the month typhoid fever caused 20 deaths, measles, 21 scarlet fever 36, whooping cough, 22, diphtheria, 36, malaria, 1; tuberculosis of lungs 265, tuberculosis of other organs, 49, cancer 130, cerebrospinal meningitis 31, diseases of nervous system, 315, diseases of circulatory system 265 diseases of respiratory system (pneumonia and tuberculosis excepted), 117 pneumonia 123, infantile diarrhea 202, diseases of digestive system (infantile diarrhea excepted) 187 nephritis, 156 suicide, 39, all other diseases or causes of death, 574

NORTH DAKOTA.

Medical Society Meeting—At the annual meeting of the Grand Forks District Medical Society, held July 8 the following officers were elected President, Dr Henry O'Keefe, Grand Forks, vice president Dr John E Courtenay, Grafton secretary treasurer, Dr Archibald L McDonald, Grand Forks, censors, Drs H G Woutat, Grand Forks, and Gudmund J Gislason, Grand Forks, delegates to the state medical association Drs Zella Stewart, Grand Forks, and William H Witherstine, Grand Forks

OHIO.

Medical Staff Resigns.—On account of difficulties between members of the medical staff and the superintendent of the Charles S. Gray Deaconess Hospital, Ironton, seven of the eight members of the medical staff have resigned.

Resolutions Regarding Dr. Eichberg.—The executive committee of the Miami Medical Alumni Association adopted resolutions setting forth the loss sustained by the profession in the decease of Dr. Joseph Eichberg, and condoling with the family of the deceased.

Judge Grants Immunity to Lawbreaker.—Through a recent decision of Judge Reed of Sandusky, a new method of enforcing the state medical law has been discovered. The State Medical Board secured an injunction restraining a so-called "chiropractic" from practicing medicine. This individual protested that he was not practicing medicine. Judge Reed replied that an injunction restraining him from such practice would not interfere with his work at all, and that, consequently, he could have no ground for objection.

Personal.—Drs. John B. Ury and John D. Westrick, Defiance; Dr. William J. Walker, Farmer, and Drs. Noah H. Jackson, Henry W. Cook and Thomas N. Dean, Hicksville, have been appointed members of the Defiance County infirmary board. ——Dr. Willard C. Kendig, Cincinnati, has been appointed examining physician for lunacy cases, and will leave shortly for Europe to take up postgraduate work.——Dr. Walter B. Laffer has succeeded the late Dr. Charles J. Aldrich as neurologist at the Cleveland City Hospital.——Dr. Don C. Hughes, Findlay, has been re-elected head physician for Ohio of the Modern Woodmen of America.——Dr. John H. Rodgers has resigned as a member of the Springfield board of health, and has been succeeded by Dr. Ira E. Seward.——Dr. Terrence J. Cunningham has been made a member of the faculty of the Toledo Medical College.——Dr. Edward M. Keefe, Cincinnati, has been appointed surgeon to St. Mary's Hospital, vice Dr. Herschell D. Hinckley, resigned.——Dr. William C. Schmidter, Cincinnati, has been appointed radiographer to St. Francis' Hospital.——Dr. William S. Keller, Cincinnati, has returned after a year in Europe.

PENNSYLVANIA.

Personal.—Dr. J. J. Mullowney, Easton, left Easton August 21 for Seattle, whence he will sail for China as a missionary. ——Drs. Jesse G. Hilleary and Samuel M. Davenport, Dubois, have returned from Europe.——Dr. Bruce P. Steele, McVeytown, had his right arm fractured recently by the kick of a horse.——Dr. John Shaeffer, McCall's Ferry, was admitted to St. Joseph's Hospital, Lancaster, to be treated for a fracture of the clavicle.

State Society Meeting.—The fifty-eighth annual session of the Medical Society of the State of Pennsylvania is called to meet in Cambridge Springs, on September 14 to 17. Two special parlor cars for members will leave Philadelphia for Cambridge Springs, September 14, at 8:25 a. m. A third special car will be attached at Harrisburg for the convenience of members from Harrisburg, York, Chambersburg, Carlisle and other points. Applications for seats in these cars should be made to Dr. Albert M. Eaton, Philadelphia.

New Tuberculosis Dispensary.—The State Department of Health has secured a building on Bloom Street, Danville, where it will establish a new tuberculosis dispensary. This will be the headquarters of the state's fight against tuberculosis in Montour County. The work will be in charge of Dr. George A. Stock. The returns for the last year show that 13 per cent. of the deaths in Danville were caused by consumption. This is the highest death rate found in any city or town in the state with a population of 8,000 or over. The average rate throughout the state is 10 per cent.

Society Meets.—At the second annual meeting of the Williamsport Medical Association the following officers were elected: President, Dr. John Senn; first vice-president, Dr. Horace G. McCormick; second vice-president, Dr. George D. Nutt; treasurer, Dr. Albert F. Hardt.——At the July meeting of the Jefferson County Medical Society, the following officers were elected: President, Dr. Abraham Balmer, Brookville; vice-president, Dr. Addison H. Bowser, Reynoldsville; secretary and treasurer, Dr. Norman C. Mills, Big Run; reporter, Dr. Charles C. Hammond, Wishaw; and censors, Drs. John H. Murray, Reynoldsville, Sylvester S. Hamilton, Punxsutawney, and John C. Sayers, Reynoldsville.

Typhoid Prevalent.—At the Pennsylvania Reform School at Morganza 28 cases of typhoid fever have developed and one death has occurred.——On August 21, 7 cases of typhoid fever were reported at Carbondale. This brings the total to 19 positive and 50 suspected cases. The source of contagion is said to be from the Bromwell dam, the town's water supply. ——Typhoid fever is epidemic in Spring City and Royersford; 90 cases are present in the former place and 32 are reported from the latter. Dr. J. Scattergood of Chester County and Dr. H. W. Whitcomb of Montgomery County, state medical inspectors, have been detailed by Dr. Samuel G. Dixon, state health commissioner, to take charge of the epidemic.——Nine inmates of the Northampton County prison, at Easton, were reported to be suffering with typhoid fever, August 21.

Pure Food Law Unconstitutional.—In the case of the commonwealth of Pennsylvania against C. M. Keephart, which was tried before Judge Bell of Blair County, August 20, the pure food law of June 1, 1907, was declared unconstitutional. Under this act the retailer had the opportunity to place the responsibility for adulterated goods on the jobber or the manufacturer, a right that nearly all exercised. With this law removed the retailer will be again amenable for all impure foods he may sell, but it is expected that they will exercise their personal rights to demand pure goods and thus avoid prosecutions under the old act. It is the object of the pure food commission to place the case before the Superior Court in time to have the law corrected at the next session of the legislature, if found defective. Judge Bell cites article 3, section 4, of the state constitution, which provides that: "No law shall be revived, amended or the provisions thereof extended or conferred by reference to its title only, but so much thereof that is revived, amended, extended or conferred shall be re-enacted and published at length." In point of fact, the judge states that the act of June 1, 1907, was an amendment to prior acts on the same subjects, the prior act being picked up bodily and thrown into the act of June 1, 1907, by reference to its title only.

Philadelphia.

Bequests to Charity.—The will of the late Levi Mayer bequeathes $1,000 to the Jewish Hospital.——A bequest of $5,000 to the Home for Consumptives at Chestnut Hill is contained in the will of the late James Sadleir, to be used to endow a room to be called the Maria Sadleir room.

Personal.—Dr. Theodore LeBoutillier has been elected clinical professor of pediatrics in the Woman's Medical College of Pennsylvania.——Dr. Charles Lester Leonard has been a guest of the British Medical Association at its meeting in Sheffield and is a delegate of the American Medical Association to the Fourth International Congress on Electrology and Radiology, at Amsterdam, September 1 to 5.——Dr. A. Wexler, resident physician in the Mt. Sinai Hospital, was seriously injured by the explosion of a steam sterilizer, August 20.——Dr. A. E. Harris has gone to Tripoli, Syria.

Health Report.—The total number of deaths reported for the week ended August 22 aggregated 490, an increase of 41 over the number reported in the previous week and an increase of one over the number reported in the corresponding week of last year. This mortality represents a death rate of 16.2 per 1,000 of population. The principal causes of death were: Typhoid fever, 6; measles, 3; pertussis, 5; diphtheria, 2; consumption, 41; cancer, 29; diabetes, 4; apoplexy, 10; hepatic cirrhosis, 5; Bright's disease, 39; heart disease, 27; arterial sclerosis, 15; acute respiratory disease, 26; enteritis, 91; premature birth, 11; congenital debility, 9; senility, 6; suicide, 5; accidents, 15, and marasmus, 10. There were 120 cases of contagious diseases reported, with 8 deaths, as compared with 107 cases and 17 deaths, reported in the preceding week.

VIRGINIA.

Not Guilty.—Dr. Arthur B. Cosby, charged with having performed an illegal operation, was exonerated from the charge at the trial, August 5, before Justice Crutchfield.

Smallpox.—Several cases of mild form have been reported in Alexandria.——A number of cases have developed at Musselman's, Spottsylvania County.

Faculty Changes.—The following changes are announced in the University College of Medicine, Richmond: Professor of theoretical pediatrics, Dr. McGuire Newton; clinical pediatrics, Dr. Paulus A. Irving; theory and practice of medicine, Dr. Alexander G. Brown, Jr.; and practice of medicine and physical diagnosis, Dr. J. Garnett Nelson.

Personal.—At the annual meeting of Fitzhugh Lee Camp, Spanish War Veterans, Richmond, Dr. Rollins Marshall was elected surgeon.——Drs. Harry D. Howe, Hampton, and Joseph T. Buxton, Newport News, returned from Europe July 31.——

Dr. Frank S. Hope, city health officer of Portsmouth, is seriously ill at St. Christopher's Hospital, Norfolk.

Health Bulletins.—Volume 1, Number 1, of the *Virginia Health Bulletin* appeared in July. It gives the details of the work of the state health department, and contains notices and articles relating to tuberculosis, typhoid fever, plague, flies and water animals. The second issue of the bulletin contains a compilation of the statute law of Virginia relating to the health of the people, and a list of the personnel of the county boards of health.

Richmond Vital Statistics.—During July there were 219 deaths in Richmond, 113 decedents being white and 106 colored. This gives an annual death rate of 22.6 per 1,000 The total deaths were 21 less than in June, and 37 less than in July, 1907. There were 33 deaths from diarrhea and enteritis, as compared with 44 last July. Typhoid fever was responsible for 6 deaths; tuberculosis and organic heart disease, for 15 each; nephritis, for 16. There were 101 cases of infectious diseases reported to the health department, 72 cases of typhoid fever, 11 of whooping cough, 9 of diphtheria, 3 each of measles and mumps, 2 of chickenpox and one case of scarlet fever.

Election of Officers.—At the annual meeting of the South Piedmont Medical Society, held in Lynchburg, the following officers were elected: *President, Dr. Henry B Melvin, Houston;* vice presidents, Drs. George W. Cocke, Danville, Walter L Williams, *Brookneal, John A Owen,* South Boston, and Charles W. Tucker, Drakes Branch; secretary, Dr. George A. Stover, South Boston, and treasurer, Dr James L Kent, Lynchburg.——At the annual meeting of the Augusta County Medical Society, held in Staunton, the following officers were elected: President, Dr. R. Sumpter Griffith, Basic City, vice-presidents, Drs. Walter F. Hartman, Swoope, Wilbur B. Payne, Covington, and Henry H. Jones, Doehill; secretary, Dr Achilles L. Tynes, Fishersville; treasurer, Dr. Thomas M. Parkins, Staunton; and censor, Dr. Henry C. Grant, Hermitage.

WASHINGTON.

Fined for Failure to Make Report.—Dr. A L. McClanahan, Seattle, is said to have been arrested and fined $20 for failure to report a case of diphtheria in his charge. He asserts that he sent in a culture to the health department, but was arrested before the report of the findings was received

Diphtheria Epidemic.—An epidemic of diphtheria *broke out* among the government employés on Tatoosh Island during August. At *one* time all the employés except one were confined to their beds. Dr. John W Edwards, with two nurses, was sent by the Marine Hospital Service from Port Townsend

Personal.—Dr. Albert McConaghy, Seattle, has been elected head of the department of physical development of the public schools of Seattle——Dr. J. H. Boles, St Louis, has been appointed physician at the Federal prison, McNiel's Island——Dr J. R. Booth, Seattle, has returned from London——Dr. William R. M. Kellogg, Seattle, underwent an operation for abscess of the liver, August 15.——Dr James A La Gasa, resident physician of the Fannie C. Paddock Memorial Hospital, Tacoma, has been made acting superintendent to fill the vacancy caused by the death of Dr. Charles McCutcheon.

Plague Prevention Work.—During July, 25 ships were fumigated and 24 ships inspected by Passed Assistant Surgeon Glover, Public Health and Marine Hospital Service, Seattle. Infection was found to exist among rats in a stable at Eighth Avenue and Madison Street, and precautions were immediately taken by the local health authorities to fumigate and clean out the locality. During July, 5,067 rats were inspected by the plague laboratory. On these 4,753 autopsies were made, and 9 were found to be infected with plague. These rats were all from the stable referred to above. Two postmortems on human subjects were made in cases considered suspicious, with negative results.

GENERAL.

INTERNATIONAL CONGRESS ON TUBERCULOSIS.

List of Special Lectures.

In connection with this Congress to be held next month, a series of special lectures will be delivered in Washington and elsewhere by eminent foreigners. The names of the speakers and the cities in which they will lecture follow

Studies in Tuberculosis in Domestic Animals and What We May Learn Regarding Human Tuberculosis Bernard Bang, Copenhagen, Denmark —Washington, D C, October 3

New Methods for the Early Diagnosis of Tuberculosis A. Calmette, Lille, France —Philadelphia, September 26

The Campaign Against Tuberculosis in the Argentine Republic. Emil Coni, Buenos Ayres —Washington, D. C, October 2.

Campaign Against Tuberculosis as Disease of the Masses in Germany. *Dr B. Fränkel, Berlin —New York, October 8*

The Causes Which Have Led to the Past Decline in the Death Rate from Tuberculosis and the Light Thrown by This History on Preventive Action for the Future. Arthur Newsholme, Brighton, England —Washington, D C, September 29

Social Life and Tuberculosis Gotthold Pannwitz, Berlin, Germany —Philadelphia,

of Preventive Meas-
ston, October 6

Heart, Blood and Lymph Vessels Andres Martinez Vargas, Barcelona Spain —New York, October 9.

The Evolution of the T[illegible]
Theodore Williams, London, [illegible] 25

The Campaign Against [illegible] the Dwelling: Modern Scientific [illegible] Dr. Maurice Letulle and M. Augustin Rey —(Joint lecture)—Washington D C, Sept. 30

Biology of the Bacillus Dr A A Wladimiroff, St Petersburg, Russia —Washington, D C, September 28

Collateral Tuberculosis Inflammation Prof N P Tendeloo, Leyden, Holland

Lectures titles of which are not stated, will be given by C H. Spronck, *Utrecht*, Holland, Boston, October 7, and Dr L. Landouzy, Paris —Washington, September 28

Papers to be Read in Section I.

DR WILLIAM H. WELCH, BALTIMORE, PRESIDENT.

This list includes all titles of papers received up to August 13:

The Viability of the Tubercle Bacillus Milton J Rosenau, Washington, D C

A Study of the Proteids of the Tubercle Bacillus Victor C. Vaughan, Ann Arbor Mich

The Action of Diffuse Light on Bacillus of Tuberculosis John Weinzerl, Seattle, Wash

The Morphology of the Tubercle Bacillus Dwight M Lewis, New Haven, Conn

New Homogeneous Cultures of the Tubercle Bacillus S Arloing and Paul Courmont, Lyons France

Comparative Study of the Tubercle Bacillus of Human and of Bovine Origin J N Davalos and J Cartaya, Havana, Cuba

The Virulence of the Bacillus in Connection with the Clinical Evolution of Pulmonary Tuberculosis A Rodet, Montpellier, France

A Chamber in Which Dried Tubercle Bacilli May Be Handled Without Danger A Parker Hitchens, Glen Olden, Pa

Channels of Infection N P Tendeloo, Leyden, Holland

The Portal of Entry of Tuberculosis Julius Bartel, Vienna, Austria

Sources and Channels of Infection of the Tuberculous Contagion. G Kuss, Angicourt, France

Portals of Entry of Tuberculosis S. Bernheim, Paris France

Relation of the Air to Tuberculous Contagion Sterilization of Air S Bernheim, Paris, France

A Study of the Tuberculous Contamination of New York City Milk Alfred F Hess, New York City.

Percutaneous Inoculations of Tuberculosis Jules Courmont and A Lesieur, Lyons, France

Immunization Experiments Against Tuberculosis Julius Bartel, Vienna Austria

Contribution to the Immunity to Tuberculosis Jules Courmont and A Lesieur Lyons, France

Immunity of Men for Tuberculosis A B Marfan Paris

Tuberculo toxoidin and Immunization Serum Y Ishigami Japan.

The Part of Enzymes in Tuberculous Lesions Eugene L Opie, New York City

The Frequency of Healed Tuberculosis of the Mesenteric Glands, with Particular Reference to the Relationship Between Hyaline Deposits in These Glands and the Healing of Tuberculous Lesions Alfred S Warthin Ann Arbor Mich

Tuberculous Infection According to the Test of Pathologic Anatomy S. Arloing, Lyons, France

Analysis of 1 000 Consecutive Autopsies in Montreal with Reference to the Incidence of Tuberculosis in the Various Organs John McCrae, Montreal Canada

Incidence of Chronic Pleurisy in 1,400 Autopsies in Montreal, and Its Relationship to Tuberculosis A R Landry Montreal

Anatomic and Pathologic Study of the Non follicular Lesions of Tuberculosis Léon Bernard, Paris, France

Pneumonia in the Process of Pulmonary Tuberculosis R Tripier, Lyons France

Anatomic Process of Hemorrhage in Incipient Tuberculosis I. *Pariot, Lyons, France*

The Kidneys in Tuberculosis of the Lungs Joseph Walsh and C M Montgomery Philadelphia

Tuberculosis of the Spinal Meninges, with a Consideration of the Mode of Infection of These Structures D J McCarthy, Philadelphia

The Liver in Tuberculosis J T Ullom Philadelphia

Pathology of Tuberculosis of the Peritoneum Walter Altschul, Prague, Austria

Experimental Tuberculosis of the Testicle Charles Esmonet, Puy de Dome, France

Multiple Toxic Tuberculous Periostitis and Adipositis O Amrein, Arosa Switzerland

Humoral Properties of Tuberculous Exudate Prognostic and Therapeutic Value Paul Courmont, Lyons, France

Title not given Camillo Calleja, Valladolid, Spain

An Experimental and Clinical Study of the Calcium Metabolism in Tuberculosis Alfred C Crofton, Chicago

Distinguished Foreigners to Attend.

The following men are now known to be coming from abroad:

Belgium: J F Heymans, Ghent

Denmark: Holger Rordam and Johannes Fibiger, Copenhagen.

Germany: G. Hormann, Munich; Mme. Lydia Rabinowitsch-Kempner, F. Meyer, G. Kirchner, Robert Koch, Gotthold Pannwitz and F. Helm, Berlin; F. Köhler, Werden a. d. Ruhr; Rumpf, Ebersteinburg b. Baden-Baden; W. Schwabe and Uhlmann, Leipzig; W. von Leube, Würzburg.

Great Britain: W. R. Smith, G. A. Heron, C. Theodore Williams, H. Horton-Smith and A. Latham, London; Sheridan Delépine, Manchester; Sims Woodhead, Cambridge; Nathan Raw, Liverpool; N. D. Bardswell, King Edward Sanatorium, Midhurst; R. W. Philip, Edinburgh; William Osler, Oxford.

France: Charles Baradat, Cannes; F. Barbary, Nice; A. Calmette, Lille; Dupeux, Bordeaux; A. J. Magnin and L. Landouzy, Paris; R. Hervé, Lamotte-Beuvron; A. Leune, Versailles; Arloing, Lyons; P. Gallot, Mentone.

Italy: Umberto Gabbi, Messina; Massalongo, Verona; Eduardo Maragliano, Genoa.

Greece: Bastile Patrikios, Athens.

Holland: C. F. J. Blocker, Voorburg; R. de Josselin de Jong, Rotterdam.

Norway: F. Harbitz, Christiania; Herm. Gade, Hagekiken pr. Bergen.

Austria: Reisinger, Komitau i Böhmen; Lang, H. von Schroetter, Bartel, C. von Pirquet and H. Riedl, Vienna; A. Taussig, J. Dvorack and T. Altschul, Prague.

Roumania: J. Mitulescu, Bucharest.

Russia: S. von Unterberger, N. Th. von Tschigaieff and A. A. Wladimiroff, St. Petersburg.

Sweden: Karl Petren, Upsala; K. O. Medin, Stockholm.

Switzerland: Spengler, Davos-Platz; Th. Exchaquet, Leysin; Egger, Basle.

Spain: Jose Chabas, Valencia; A. Martinez-Vargas, Barcelona.

Hungary: H. Preisz, Budapest.

CANADA.

Ontario Health Report.—The returns to the Provincial Board of Health of Ontario for June give 843 cases of infectious disease, with 249 deaths, as compared with 1,023 cases and 240 deaths for June, 1907. The total deaths for June, 1908, were 2,117, and for the corresponding month of 1907, 2,078, the respective death rates being 12.2 and 12.1 per 1,000.

Stricken from List.—The names of 189 physicians have been stricken from the register of physicians by the Ontario Medical Council on account of non-payment of dues for three or more years. These men have declined, on principle, to pay the dues, holding that when they once become qualified physicians they should not be compelled to pay annual charges.

Contract for Sanatorium Awarded.—The contract for the erection of a sanatorium for consumptives at Tranquille, B. C., has been awarded by the executive committee of the British Columbia Antituberculosis Society to William O'Dell, Vancouver, for $65,000. The provincial government has announced a further donation of $20,000, making a total government appropriation of $50.000. Of this new amount $10,000 is conditional on the erection of a separate building for the treatment of advanced cases.

Personal.—Lieut.-Col. Cassius W. Belton, London, principal medical officer, militia district No. 1, has been detailed as administrative medical officer for the permanent force camp at Quebec in connection with the tercentenary.——Dr. Donald C. Malcolm, senior physician at the General Public Hospital, St. John, N. B., has resigned.——Dr. James R. Bird, Whitewood, Sask., who has been critically ill for the past two or three months, is now reported convalescent.——Dr. Algernon Woolverton, Hamilton, was stricken with cerebral hemorrhage while a passenger on the steamship *Victorian*, and is now in a hospital in Montreal.——Drs. Robert Ferguson, London, and Frederick Guest, St. Thomas, have been appointed local surgeons for the Southwestern Traction Company.——The following Toronto physicians are in England: Drs. Irving H. Cameron, Clarence L. Starr, John N. E. Brown, Robert A. Pyne, R. W. Bruce Smith, Charles O'Reilly, Andrew R. Gordon and John T. Fotheringham.——Dr. Robert J. Blanchard, Winnipeg, president of the Canadian Medical Association, is in England.——Dr. Robert D. Rudolf, Toronto, has been appointed professor of therapeutics in the University of Toronto.——Dr. George A. Bingham, Toronto, associate professor of surgery in the University of Toronto, has returned from England.——Dr. Thomas G. Roddick, Montreal, has resigned as dean of the medical faculty of McGill University and has been succeeded by Dr. Francis J. Shepard. Dr. Roddick is at present in England.——Dr. Ingersoll Olmsted, Hamilton, is spending a few months in Germany.

Society Meetings.—At the twenty-eighth annual meeting of the New Brunswick Medical Society, held at St. Stephen, the following officers were elected: President, Dr. John R. McIntosh, St. John; vice-presidents, Drs. Clinton T. Purdy, Moncton, and Angus J. Murray, Fredericton Junction; corresponding secretary, Dr. J. V. Anglin, St. John; recording secretary, Dr. George G. Corbett, St. John; treasurer, Dr. George G. Melvin, St. John; and members of the medical council, Drs. James P. McInerney, St. John; Edward T. Gaudet, St. Joseph; P. Robertson Inches, St. John; Murray McLaren, St. John, and Joseph M. Deacon, Willtown. The next meeting of the association will be held in St. John.——The Welland County (Ont.) Medical Association held its annual meeting in Welland, July 5, and elected the following officers: President, Dr. Jacob H. Howell, Welland; vice-presidents, Drs. Fred J. T. Old, Port Colborne, George B. Snyder, Ridgeway, and J. M. Dalrymple, Fenwick; and secretary-treasurer, Dr. Ernest L. Garner, Welland.——The seventh annual meeting of the Maritime Medical Association was held in Halifax, N. S., July 1, and the following officers were elected: President, Dr. Patrick C. Murphy, Tignish, P. E. I.; vice-president, Dr. Willis B. Moore, Kentville, N. S.; vice-president for New Brunswick, Dr. S. C. Murray, Albert; and secretary, Dr. George G. Melvin, St. John. The association will meet in Charlottetown, P. E. I., next year.

FOREIGN.

An Antiquackery Exposition.—A traveling exposition of quack advertisements and methods is being organized at Upsala, Sweden, to send throughout the country.

Measures Taken to Prevent Introduction of Malta or Mediterranean Fever into Turkey.—Consul-General Ozmun, Constantinople, reports that it has been decided by the Ottoman government as a measure of public health to prohibit the importation into the empire of sheep, goats or other animals from Malta; also their products such as milk, cheese and meat which contain the germs of the fever known as Malta or Mediterranean fever.

Danish Surgical Association.—T. Rovsing and E. A. Tscherning of Copenhagen have issued an appeal to surgeons to combine in a national society to hold six meetings between October and May. The medical directors of large hospitals containing a surgical service are also eligible for membership. The organization of a surgical association has been planned for some time, as it has been realized that addresses on strictly surgical themes are out of place in general medical meetings.

Dollinger Souvenir Volume.—The professional silver jubilee of Prof. Julius Dollinger of Budapest was celebrated recently by his friends, and the last issue of the *Orvosi Hetilap* was expanded into a *Festschrift* in his honor. His present and former pupils contributed a number of interesting articles on various phases of surgery and orthopedics, Dollinger having been privat docent of the latter specialty before he was appointed to the chair of general surgery. The recent systematic organization of cancer research in Hungary is also his work.

Institute for Radium Research at Vienna.—As already mentioned in these columns, the Academy of Sciences at Vienna has now in its possession a few grams of radium salts obtained from about 25,000 pounds of the ore from the Joachimsthal uranium mines. An anonymous benefactor has now given about $100,000 to erect and equip an institute for physical research with this radium. A Physical Institute has long been planned at Vienna and the Radium Institute is to adjoin it. It is hoped that Vienna will become a center for research on the properties of radium, as it has the monopoly at present of its production.

LONDON LETTER.

(From Our Regular Correspondent.)

London, Aug. 15, 1908.

The Care of the Feeble-Minded.

The royal commission on the care of the feeble-minded, which was appointed in 1904, has issued an elaborate report, which will be followed by six volumes of evidence and appendices, giving in detail the grounds on which the commissioners have arrived at their conclusions. They estimate that there are no fewer than 149,268 feeble-minded persons in England and Wales, in addition to the 121,979 who are certified to be insane, making a total of 271,607, or 0.83 per cent. of the population who are unfitted to be entrusted with the direction of their lives or the care of their property. The commissioners recommend an extension of the existing protection of property under the Lunacy Act of 1890 to all classes of the mentally defective.

The Royal Institute of Public Health.

The annual congress of the Royal Institute of Public Health has been held at Buxton. The president, Sir James Crichton Browne, delivered an important address on "Parsimony in Nutrition." He observed that of all methods of living the most important are those which relate to the upkeep of the body by food. The recognition of its importance had of late years led to constant repetition of the inquiry: "What must I eat to be saved?" and replies had been furnished by a shouting multitude of enthusiasts, cranks and empirics, each with an infallible system of his own. The reaction against overfeeding was in danger of being carried to excess. The standards of Professors Voit and Atwater had until lately been generally accepted by physiologists and the first indication of their being excessive proceeded from an American, Mr. Horace Fletcher, who believed he had discovered the enormous importance of prolonged mastication and the maintenance of health and strength by means of it on much less food than had been regarded as necessary. The late Sir Michael Foster invited Mr. Fletcher to Cambridge, where some observations were made to some extent confirmatory of his claims. In two individuals it was found that complete bodily efficiency was maintained on a well-chewed dietary of less than one-half of that usually taken. But Sir Michael declared it to be doubtful whether continued efficiency could be maintained on this low diet. Further investigations were made by Professor Chittenden at Yale, with results that had attracted widespread attention. But as the investigation proceeded the chewing became unimportant, except in so far as it diminished the craving for food. The real question was found to be the quantity of proteid required by the body. The conclusion was reached that the quantity of proteid required was not more than one-half of that previously considered necessary. Sir James submitted some considerations which should induce his audience to pause before accepting Professor Chittenden's views. If the latter were right, then all the world up to this time, except a few supposed faddists, was wrong. All the successful races of the world had habitually consumed proteid far in excess of Chittenden's standard and what is required for the repair of tissue. It was inconceivable that they should all under the most diverse conditions have made the same mistake. Sir James concluded that it is not so much economy as poverty in nutrition that is the question of the hour.

Sick Workhouse Children to Go to the Country.

The great empty hospital at Carshalton, built for infectious diseases and containing 800 beds will be used for the sick children of the various London infirmaries. These children number over 2,000, and at present are in the crowded wards of the London infirmaries mixed with adult patients.

The Hospitals and Medical Education.

The changes which modern progress has produced in the methods of teaching medical students have resulted in something approaching a crisis in the London medical schools. The development of laboratory methods of instruction has enormously increased the cost of teaching. The schools, especially the unendowed ones, can cover this only by increasing the fees of students to a prohibitive figure or by obtaining contributions from the benevolent rich. But the latter prefer to contribute to the hospitals, and, largely in consequence of the outcry raised by the antivivisectionists, the King's and the Hospital Sunday funds are forbidden to contribute anything to the medical schools, though attached to the hospitals. A proposal was made to reduce the expenses of maintaining the staffs and laboratories of the various medical schools of the metropolis by substituting for them a single institute of medical sciences at which all the preliminary subjects, such as chemistry, physiology, pathology, etc., would be taught. The enormous saving and the increased efficiency of such a scheme are evident. Subscriptions amounting to $500,000 were subscribed for the purpose, but the scheme has fallen through. It only remains for the schools which are in difficulties to endeavor to obtain endowments. But an attempt in this direction by St. George's Hospital School has proved disappointing. In Great Britain the wealthy largely, and even munificently, contribute to the numerous charities, but will seldom give anything for scientific objects. The teaching of medical students is regarded as a process which should be paid for by the students.

Accident or Disease?

A knotty point connected with accident insurance has been raised in the courts. A man was hunting when his horse, caught on a strand of barbed-wire concealed in a fence, threw him on wet ground. Thoroughly soaked, he rode home, which took him an hour and a half. Pneumonia supervened the next day and proved fatal. He was insured against accident, and it was contended that the fall, wetting and exposure in combination were the cause of the pneumonia, by diminishing the general vitality of the system and the local resistance of the lung, so that the pneumococci were enabled to multiply. The insurance company relied on a clause in the policy excluding "disease or other intervening cause" as "the direct or proximate cause of death." The case turned on the exact meaning of "direct or proximate." With some doubt the judge decided in favor of the claimant.

Researches Subsidized by the Government.

The president of the local government board has authorized the following researches in connection with the annual grant voted in parliament in aid of scientific investigations, concerning the causes and processes of disease: 1. A further inquiry by Dr. H. M. Gordon into the character and differential tints for the microbes in the throats of patients suffering from scarlet fever. 2. An investigation of protracted and recurrent infection in diphtheria by Dr. Theodore Thomson and Dr. C. J. Thomas. 3. An investigation of protracted and recurrent infection in typhoid fever by Dr. Theodore Thomson, in conjunction with Dr. Hedingham. 4. Investigations by Dr. V. G. Savage into the presence of paratyphoid bacilli in men, the differentiation of streptococci in goats and the bacteriologic measurement of pollutions of milk. 5. A statement of the results of bacteriologic examination of over 7,000 samples of milk from different parts of the country by Professor Delépine. 6. An investigation of the rôle played by flies as carriers of disease, by Dr. Copeman and Professor Nuttall. 7. An inquiry into the condition of flock bedding by Dr. Farrar. The bacteriology and biology of bedding will be undertaken by Professor Nuttall. 8. A statistical inquiry into the social incidence of disease will also be begun. The prevalence of varicose veins and hernia under different social conditions is the first of a number of subjects under this head.

PARIS LETTER.

(From Our Regular Correspondent.)

PARIS, FRANCE, Aug. 11, 1908.

INTRODUCTORY.

In these letters, of which this one inaugurates the series, I propose to keep the readers of THE JOURNAL informed in regard to the scientific and professional movement of medicine in France. The professional and social aspects of medicine will often have the first place. In fact, in regard to scientific questions, the care with which THE JOURNAL notes the original works as they appear in the best French periodicals and summarizes the most interesting, relieves the correspondent of the task of dwelling on things that can be learned fully as well from this extremely valuable section, the "Current Medical Literature." However, as the works analyzed in this department of THE JOURNAL represent only one of the many manifestations of scientific activity, I shall occasionally seek to inform the readers of the progress realized in the medical sciences in France in congresses or in reports before scientific societies or in the event of the publication of some book of general interest. But especially I hope to present professional questions—medical economics—for in France, as elsewhere, under the influence of the ever-increasing complexity of social conditions, these questions are becoming more and more important for the physician, while at the same time this aspect of medical life in France is that of which physicians of other countries generally know least, and in regard to which they have only vague ideas.

A SIGN OF THE TIMES: THE PRACTITIONERS' CONGRESS.

From the professional point of view, the present epoch is of unusual interest, as for some time there has been considerable agitation in the profession in France. In April, 1907, for the first time the general practitioners of the country assembled in a congress to discuss professional interests exclusively; and a few weeks ago a second congress was held at Lille, as has already been mentioned in THE JOURNAL. Reform in medical education and the free choice of the physician by the injured in industrial accidents were the main subjects discussed. Without wishing to attribute too much importance to the results of these two congresses, it must be recognized that the mere fact of such assemblies devoted exclusively to discussion of questions affecting the profession as a whole, is certainly a significant sign of the times.

THE MEDICAL CRISIS.

What are the causes of this agitation? The principal cause lies in the hard times which the medical profession in France is now experiencing. Twenty years ago Professor Bouchard was able to say in inaugurating his course of general pathology: "We are living in a time in which it is good to live, when one is interested in medicine." This is equally true today, but unfortunately many of our confrères might be tempted to modify this aphorism a little by adding: "We are living in a time when it is hard for a physician to live." The practice of medicine has in fact become very unsatisfactory. Of course, there are no exact statistics on the subject. But Dr. A. Clerc has been conducting an inquiry which allows a certain insight into the gravity of the situation. Dr. Clerc sent out a question blank asking information in regard to: 1, Years of practice; 2, fees received last year; 3, professional expenses. The answers received allowed the following conclusions, based on the total average practice: In the large cities after the second year of practice the income is 3,000 francs ($600), which increases by $200 each year up to the twelfth year, when it ranges from 12,000 to 14,000 francs ($2,400 to $2,800). After the twenty-fifth year it declines, and by the thirty-fifth reaches $600 or less. In the small towns and in the country, the débutant rapidly reaches 4,000 francs ($800), 6,000 ($1,200) by the third year and 8,000 ($1,600) after seven years, without ever geting much higher, and falling by the twenty-fifth year below $1.200, with insignificant results after the thirtieth year.

But to appreciate the actual meaning of these figures the professional expenses must be borne in mind. These expenses are high when one's practice is over $1,000 or $1,200. These expenses are particularly high for specialists, for physicians at health resorts, etc. For example: X., general medicine, income 27,225 francs, professional expenses, 7,000 francs. Y., specialist, income 30,000 francs, professional expenses 14.000, household expenses 15,800 francs. Z., winter resort, fees 6.200 francs, professional expenses 4,000 francs. XX., mineral springs resort, fees 6,000 francs, and professional expenses 3,000 francs. (A franc, it will be remembered, is one-fifth of a dollar, or 20 cents.)

Thus the practice of medicine is far from assuring a livelihood for the physician and his family, and a large number of practitioners find themselves obliged to make up the deficit by extramedical means.

CAUSES OF THE CRISIS.

At first it was believed that one of the principal causes of this crisis was the afflux of foreign students, who after graduation settled down in France to practice medicine. In order to remedy this competition, in 1898 a university diploma was inaugurated for foreign medical students which did not confer the right to practice, like the state diploma. But the importance of this competition had been singularly exaggerated, as is shown by the fact that the number of foreign students has remained about the same since as it was before, very few of them wishing to settle down in France. Foreigners wishing the state diploma are now obliged to produce the same credentials as French students (the baccalaureate degree and certificate of studies in physics, chemistry and natural history), but the number of medical students in the seven medical schools of the country is 819, in 1908 (of whom 635 are inscribed for the university diploma), while the number in 1898 was 908. The restrictive measures adopted in regard to foreign students had no effect in preventing the onward march of the medical crisis, which shows that its cause must be sought elsewhere. This cause it was supposed had been found when the term "*pléthore médicale*," had been pronounced. In France, where picturesque expressions are so popular, this term of "medical plethora" has had a great vogue. And yet I venture to affirm that it is with this term as with so many other formulas which everyone repeats and accepts with confidence, without ever taking the trouble to verify whether and in what measure they represent the truth.

In the first place, it is not true to say that the number of physicians is constantly increasing. Since 1900 the total number of students matriculated at the medical school in Paris has been constantly declining. From 3,328 in 1900 it dropped to 2,754 in 1907, and only during the current year has it gone up a little (3,024). As to the number of physicians graduated by the various faculties, this has also regularly declined. From 1,150 in 1901 it dropped to 914 in 1907. The Paris school, which in 1901 graduated 679 doctors, in 1907 graduated only 434.

There are at present in France (exclusive of the colonies), 19,089 physicians; even adding the health officers (the law of 1892 suppressed the *officiat de santé*, but the health officers appointed before this date have the right to practice), the total number of physicians is 20,020. According to the last census (March, 1906), the total population of France is 39,252,267 inhabitants. There is thus one physician to 1,966 inhabitants, or omitting the health officers, one to 2,056 inhabitants. In other words, for each 10,000 inhabitants there are 4.86 physicians, which is a proportion much lower than that in other countries, especially in the United States.

What proves still better that the total number of physicians is not excessive, is that about 30,000 of the 36,000 communes into which France is divided have no medical man, although 17,000 communes have less than 500 inhabitants each.

AN OVERCROWDED PROFESSION.

Thus we see that France is not overcrowded with physicians. But the medical men are too irregularly distributed. Beside the departments which, like those of the Alpes-Maritimes (Nice), have 12.2 physicians to the 10,000 inhabitants; there are others, like Finistère, where the proportion drops to 1.96 per 10,000. The large cities, of course, have the greatest attraction for medical men. Paris, for example, has 3,901 physicians for a population of 2,763,393, which gives one physician to 708 inhabitants. The proportion is still higher at Nice, where there is one doctor to each 536 inhabitants. This is the real source of the trouble. The young physicians who, in the cities where the profession is so overcrowded, have such a hard time and often succumb in the struggle, could easily gain a livelihood in the small towns and rural districts, where competition and the struggle for existence are much less severe, and where, besides, the professional expenses are infinitely less onerous. This is a most important point. In the large cities a considerable proportion of one's income is absorbed by keeping up an establishment which has to be more or less luxurious. Thus numbers of young physicians who imprudently settle down at Paris find themselves compelled to leave the capital after a certain time. It may not be without interest to remark that of late physicians change their addresses very frequently. Of course, a change of residence may be made for various reasons, but these frequent changes offer an indirect proof of the difficulties experienced by many physicians in establishing a practice at the point first chosen.

On the other hand, the abuse of free medical care aggravates very much the material situation of physicians. On all sides the free clinics are multiplying, and numbers of well-to-do persons, even the wealthy, frequent these clinics without scruples, as well as the free consultations in the hospitals. This has reached such a point that some ironically ask whether we may not soon have to pay the sick to allow us to treat them. The former dean of the Paris medical faculty, Professor Debove, tells the story of a patient in his service whom he wished to demonstrate at a clinical lecture, but the patient demanded pay by the day, saying that he knew his case was very interesting, and that he would enjoy being in a clinic with which he was familiar.

Besides all this, physicians are peculiarly exploited by certain lodges, mutual aid societies and the like. The number of these organizations is constantly increasing, and as they charge their members only very low rates, scarcely sufficient to insure their beneficiaries a suitable daily indemnity in case of illness, they skimp on medical attendance. These societies also present another inconvenience, which is that their members are not allowed their free choice of a physician, but must take the physician hired for the purpose by the society.

THE NEW FRENCH PHARMACOPEIA.

The new Codex will soon be ready for distribution. The last edition of the "Codex medicamentarius" (the French pharmacopeia) was issued Feb. 13, 1884. As this edition had ceased to conform with the present status of therapeutics and with the progress realized in this field of science, a special commission was appointed by the minister of public instruction for revision of the Codex. This commission has been at work for several years and concluded its labors some time ago, so that an official decree of last July stated that the use of the new Codex (edition of 1908) is and remains obligatory on and after September 15. As yet, however, the new edition has failed to make its appearance.

Pharmacology

[Contributions from the Chemical Laboratory of the American Medical Association.]

URISEPTIN.

Another Proprietary of the "Hidden Drug" Type.

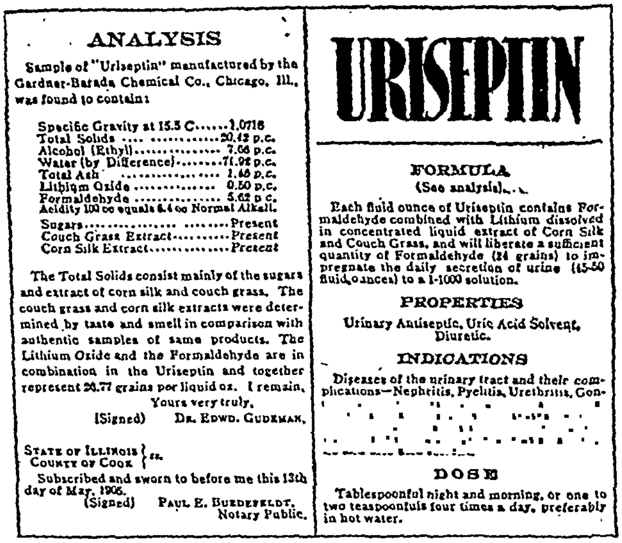
W. A. PUCKNER AND W. S. HILPERT.

"Uriseptin," manufactured by the Gardner-Barada Chemical Co. of Chicago and claimed to be a "urinary antiseptic, uric acid solvent and diuretic," was examined in the laboratory of the American Medical Association to determine to what extent the claims made for it are justified.

The preparation as purchased in the open market bears a label which presents the claims of the manufacturers, emphasized by the chemical analysis duly signed by an analyst and attested by a notary. Accompanying is a reproduction of part of the label.

Before the examination had extended very far it was found that discrepancies existed between facts and claims, and by the time the analysis was complete Uriseptin was found to be in the same class as many other proprietary remedies that have been discussed in these columns.

Our examination shows that the most misleading statement is that concerning the "lithium-formaldehyd" compound the presence of which is claimed, more or less directly, by both the manufacturers and the analyst employed by the manufacturers. Although the chemical properties of lithium and formaldehyd indicate in themselves that the existence of such a compound would be most improbable, yet considerable time was spent in searching the chemical literature for such a compound. Thorough search, however, demonstrated that no such compound, *nor any* that even approximated it, has been described.



ANALYSIS

Sample of "Uriseptin" manufactured by the Gardner-Barada Chemical Co., Chicago, Ill., was found to contain:

Specific Gravity at 15.5 C.	1.0718
Total Solids	20.42 p.c.
Alcohol (Ethyl)	7.06 p.c.
Water (by Difference)	71.92 p.c.
Total Ash	1.46 p.c.
Lithium Oxide	0.50 p.c.
Formaldehyde	5.62 p.c.

Acidity 100 cc equals 6.4 cc Normal Alkali.

Sugars	Present
Couch Grass Extract	Present
Corn Silk Extract	Present

The Total Solids consist mainly of the sugars and extract of corn silk and couch grass. The couch grass and corn silk extracts were determined by taste and smell in comparison with authentic samples of same products. The Lithium Oxide and the Formaldehyde are in combination in the Uriseptin and together represent 26.77 grains per liquid oz. I remain,

Yours very truly,
(Signed) Dr. Edwd. Gudeman,

State of Illinois } ss.
County of Cook }

Subscribed and sworn to before me this 13th day of May, 1906.
(Signed) Paul E. Burdefeldt,
Notary Public.

URISEPTIN

FORMULA
(See analysis).

Each fluid ounce of Uriseptin contains Formaldehyde combined with Lithium dissolved in concentrated liquid extract of Corn Silk and Couch Grass, and will liberate a sufficient quantity of Formaldehyde (24 grains) to impregnate the daily secretion of urine (45-50 fluid ounces) to a 1-1000 solution.

PROPERTIES

Urinary Antiseptic, Uric Acid Solvent, Diuretic.

INDICATIONS

Diseases of the urinary tract and their complications—Nephritis, Pyelitis, Urethritis, Gon- [illegible]

DOSE

Tablespoonful night and morning, or one to two teaspoonfuls four times a day, preferably in hot water.

Reduced reproduction of part of the label from a package of Uriseptin.

The question then arose as to the form in which the lithium and the formaldehyd are present. The statements regarding its properties as a urinary antiseptic and the fact that the preparation is said to slowly liberate formaldehyd in the bladder point strongly to the presence of hexamethylenamin.

Tests[1] were applied to demonstrate whether the formaldehyd was present as a lithium compound, and if not, whether it existed in the form of hexamethylenamin. By these the presence of hexamethylenamin was proved and the absence of formaldehyd in other combinations demonstrated. This fact alone shows that the preparation is deliberately marketed under a false claim, and it shows further that the analysis on the label is worthless. The quantitative method of analysis—which will be published in the *Journal of the American Chemical Society*, September, 1908, and of which an outline appears below[2]—demonstrated the presence of 5.51 gm. hexamethylenamin per 100 c.c. (25.15 gr. per fluidounce).

Besides the hexamethylenamin, Uriseptin contains lithium[3] and a benzoate.[4] Concerning the latter nothing is said in the analysis, whose worthlessness is again demonstrated. By quantitative methods[5] Uriseptin was found to contain lithium and a benzoate in such proportions as would indicate that the lithium and the benzoate radicle exist as lithium benzoate. This fact is further indicated by the claims made for the preparation regarding its properties as a uric acid solvent, for which purpose lithium benzoate is often used. Again, the demonstration that the formaldehyd present is in combination as hexamethylenamin precluded any possible chemical combination between lithium and formaldehyd and adds another strong point in support of the conclusion that the lithium and benzoic acid are in combination as lithium benzoate.

CONCLUSION.

By chemical analysis the active ingredients of Uriseptin are shown to be hexamethylenamin, approximately 5.5 gm. per 100 c.c. (about 25 gr. to each fluid ounce), and lithium benzoate, approximately 0.70 gm. per 100 c.c. (about 11 gr. to each fluid ounce), neither of which compounds is mentioned in the advertising matter on the label or in the so-called "analysis" on the label. The statements concerning the composition of Uriseptin are false and appear to be a deliberate attempt to mislead physicians.

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[1] Qualitative Tests for Hexamethylenamin.—The identification tests used to demonstrate the presence of hexamethylenamin in Uriseptin were those proposed by Horton (*Ber. d. deut. Chem. Ges.*, xxi, p. 2000) and by P. Dobriner (*Zeit. f. anal. Chem.*, xxxvi, p. 44) in which hexamethylenamin dibromid ($C_6H_{12}N_4Br_2$) and the mercuric chlorid compound ($C_6H_{12}N_4 6HgCl_2$) are made use of. The addition of bromin water to Uriseptin gave an orange-colored precipitate which when washed and dried had the appearance of the precipitate obtained when solutions of pure hexamethylenamin are treated with the same reagent. This precipitate on drying over potassium hydroxid became a light yellow identical with the corresponding body obtained from pure hexamethylenamin. When boiled with water it gave off the odor of formaldehyd and by ordinary tests ammonia, bromin and hexamethylenamin were found in the resulting solution exactly as is the case when pure hexamethylenamin dibromid is subjected to the same conditions. The melting point of the yellow body obtained was found to be 196-200 C., which is practically the melting point of hexamethylenamin dibromid. As a final and rigorous proof of identity pure hexamethylenamin dibromid was mixed with some of the supposed dibromid and the melting point taken. The melting point of the mixture was found to be 194-200 degrees demonstrating beyond question the identity of the compound. As a confirmative test the mercuric chlorid test was applied. Mercuric chlorid precipitated from Uriseptin an amorphous white body which *later turned to* a mass of crystals. *This* crystalline body when washed and dried and boiled with dilute acid liberated formaldehyd. The resulting solution responded to tests for ammonia, hexamethylenamin and mercury. The same test applied to pure hexamethylenamin solution gave exactly the same results. A still further confirmation that hexamethylenamin was present as such and not in some combination which bromin water or mercuric chlorid might decompose, was the *fact* that chloroform extracted from Uriseptin a substance that had the same crystalline form as pure hexamethylenamin crystallized from chloroform, and which responded to all the above reactions for hexamethylenamin.

[2] Quantitative Test for Hexamethylenamin.—Uriseptin was boiled with alkali to liberate and drive off all ammonia present as ammonium compounds, and then boiled with acid to decompose the hexamethylenamin. Finally the mixture was made alkaline again to liberate the ammonia resulting from the decomposition of the hexamethylenamin and distilled into normal acid; the actual quantities taken and the results obtained are given here: It was found that 5.0346 gm. of Uriseptin yielded an equivalent of 74.43 c.c. tenth-normal ammonia and 5.0197 gm. Uriseptin yielded an equivalent of 74.33 c.c. tenth-normal ammonia. The average of the two calculated to hexamethylenamin gives the result given above, 5.51 gm. per 100 c.c. or 25.15 grains hexamethylenamin per fluidounce.

[3] Lithium.—This element was identified in the ash resulting *from the incineration of Uriseptin* by the ordinary tests.

[4] Benzoic Acid.—This was found by making a chloroform extraction of an acid solution of Uriseptin and applying tests for benzoic acid to the residue left after the evaporation of the chloroform.

[5] Quantitative Tests for Lithium and Benzoic Acid.—Lithium was estimated by the method of Gooch (*Amer. Chem. Jour.*, ix, p. 33). Uriseptin, 2.8696 gm., *yielded* 0.0246 gm. lithium sulphate (Li_2SO_4) and 2.1330 gm. Uriseptin yielded 0.0228 gm. lithium sulphate (Li_2SO_4), giving an average of 0.95 per cent. Li_2SO_4 which is equivalent to 2.35 gm. lithium benzoate in 100 c.c. The benzoic acid was determined by extraction of an acid solution of Uriseptin, evaporating and titrating the residue. Estimations made in this way indicated the presence of 2.00 per cent. of benzoic acid, or 2.10 gm. per 100 c.c. To show that the benzoic acid and lithium are present in the proper proportions to form lithium benzoate, the following is given: Calculating the proportional quantity of benzoic acid required for the quantity of lithium found, the figure, 2.24 gm. per 100 c.c., was obtained, agreeing very closely with the percentage of benzoic acid actually found, that is, 2.00 per cent., or 2.10 gm. per 100 c.c.

COMMENT.—Investigation of the various "patent" and so-called "ethical proprietaries" advertised to the public and to the medical profession shows that those that have any value as therapeutic agents depend for that value on some well-known drug or drugs. Hence while many proprietaries have some virtue the ingredients which are of any value are so concealed by the coined and "near scientific" names applied to them that these drugs are usually unrecognizable. The many and various acetanilid mixtures furnish examples of this class of proprietaries. And now we find another example in that much advertised nostrum Uriseptin.

According to our chemists the chief ingredients of Uriseptin are hexamethylenamin and lithium benzoate. Hexamethylenamin is a valuable so-called urinary antiseptic—probably one of the best we have. It is a pity that more physicians do not know the value of this drug in and of itself; it is a common ingredient of many proprietaries and yet too seldom prescribed under its true name. There is no reason for its being given in the form of a nostrum; it requires no skill in compounding, for it is best given in its powdered form either in capsules or otherwise. So that like acetanilid the old argument of the nostrum men that the preparation needs skill in compounding will not hold. If a physician wants to prescribe hexamethylenamin let him prescribe it in its simplest and best form, and thus know exactly what he is giving.

Lithium benzoate also has its rightful place in the materia medica but not hidden in a proprietary mixture to be prescribed unknowingly. It is hard to conceive of any one thing that operates more disastrously against scientific therapeutics than the vicious practice of marketing under proprietary names standard and valuable drugs, with their identity purposely concealed. Yet how frequently it is done. Well-known drugs of unquestioned worth are combined with those that are little known and of doubtful value, or more likely absolutely worthless; the mixture is put on the market under a high-sounding name and it is exploited through physicians as a panacea for all kinds of diseases.

In this, as in so many other instances, an "analysis" made to order is given to lend an air of apparent respectability and scientific standing to the preparation or to its exploiters, with the object, of course, of misleading physicians into thinking they are reading unbiased testimony. In addition, the "literature" accompanying the preparation is usually a jargon of pseudo-scientific verbiage put in to serve the same purpose as the analysis—that of catching the careless physician.

This state of affairs will continue just so long as the medical profession will tolerate it—and no longer. So long as members of our profession will prescribe proprietaries on the statements of their owners—both as to their composition and therapeutic value—just so long will pseudochemical and pseudopharmaceutical companies fatten at the expense of the medical profession and to the detriment of the public health.

PYRENOL TABLETS AND EGLATOL CAPSULES.

More Unreliable Horowitz Products

We have had occasion in commenting on the unreliability of certain manufacturers regarding their so-called synthetic products to refer to the preparations of the *Chemisches Institut* of Dr. A. Horowitz of Berlin. It has been shown[1] that several of the products of this concern do not possess the composition claimed for them. It is not always possible to produce a synthetic compound by putting the necessary materials together and the failure of such a combination to possess uniform properties does not always justify an accusation of dishonesty or incompetency. When a pharmaceutical manufacturer, however, puts out tablets that vary widely in their content of the active ingredient either gross carelessness or intentional fraud must be assumed. G. Frerichs of Bonn has recently investigated the tablets of Pyrenol put out by Horowitz to determine the amount of extraneous material found in them.[2]

The tablets are advertised to contain 0.5 gm. (7.5 grains) of Pyrenol. While the tablets contained much matter which was insoluble and therefore not Pyrenol, yet the total weight of the tablets proved to be on the average but little more than 0.5 gm. (7.5 grains), in some cases even less. The percentage of Pyrenol in these tablets varied from 45 to 90 per cent., and on the average it would appear that in giving the Pyrenol tablets the physician would administer only about two-thirds of the amount of Pyrenol which he would naturally believe that he was giving.

Frerichs has since investigated capsules of Eglatol,[3] a mixture of chloral hydrate, antipyrin, caffein, urethane and menthol, put up by Horowitz and found similar irregularities in weight, the empty capsule sometimes weighing more than the contents. Frerichs sarcastically remarks that the physician may content himself with the feeling that his patient is getting in each capsule about the same amount of gelatin and may rest assured that he will not get too large a dose of the medicine. Frerichs has also examined Arhovin capsules,[4] put up by Horowitz, and found that the amount of Arhovin which they contained varied widely and usually was much less than the amount which they were claimed to contain.

These products, except Eglatol, are on the American market, so that these investigations are of practical importance to the physicians of the United States. Such investigations as these of Frerichs serve to emphasize again the need of constant supervision of manufactured pharmaceutical products.

Correspondence

Determination of Sugar in Urine.

BATTLE CREEK, MICH., Aug. 14, 1908.

To the Editor:—In THE JOURNAL, Aug. 8, 1908, page 496, is an excellent method for the rapid determination of the percentage of sugar in urine. I wish to congratulate Dr. Moffitt on his success in simplifying this determination of the percentage of sugar so that anyone can do it in a few minutes. I believe, however, that I can suggest a slight change in the method that will make it even more simple. If 1 c.c. of Fehling's solution be added to 4 c.c. of aqua ammonia instead of the distilled water the result will be, in effect, Pavy's solution, in which the reduced copper oxid is held in a colorless solution. The advantage of this method is that the end reaction, when the Fehling's solution is completely reduced, can be more accurately and easily determined. One does not have to wait for the copper oxid to settle, nor is it necessary to filter the solution to make sure that all the copper is reduced. I have tested this method using the one described by Dr. Moffitt as a control, and find that it is accurate.

WILFRID HAUGHEY.

Additional Members of the American Committee of the International Medical Congress.

NORTHEAST HARBOR, MAINE, Aug. 14, 1908.

To the Editor:—Please add the following names inadvertently omitted from the list previously sent you for membership of the American committee for the Sixteenth International Medical Congress, and published in THE JOURNAL, June 13, 1908, page 2008:

W. W. Keen, M.D., Philadelphia.
Joseph Leidy, M.D., Philadelphia.
Charles Kollock, M.D., Charleston, S. C.
James Ewing, M.D., New York.
Walter James, M.D., New York.
H. A. Hare, M.D., Philadelphia.
George Brewer, M.D., New York.
John Munro, M.D., Boston.
James Tyson, M.D., Philadelphia.
E. L. Trudeau, M.D., Saranac, N. Y.
George E. de Schweinitz, M.D., Philadelphia.
L. J. McMurtry, M.D., Louisville, Ky.
A. A. Van der Veer, Albany, N. Y.

J. H. MUSSER.

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[1] Iodotin, THE JOURNAL A. M. A., March 7, 1908, 784; Arhovin, ibid., May 9, 1908, 1741.

[2] Apotheker Zeitung, July 18, 1908, p. 521.

[3] Apotheker Zeitung, July 22, 1908, p. 529.

[4] Apotheker Zeitung, July 25, 1908, p. 538.

Book Notices

OBSTETRICS. A Text-book for the Use of Students and Practitioners. By J. Whitridge Williams, Professor of Obstetrics, Johns Hopkins University. Second Enlarged and Revised Edition. Illustrated. Cloth. Pp. 950. Price, $6.00. New York: D Appleton & Co, 1907.

This edition has been brought up to date in every respect many chapters having been rewritten, and new sections added on the "Metabolism of Normal Pregnancy," "Vaginal Cesarean Section," and "Pubiotomy and Contractions of the Pelvic Outlet."

In regard to the etiology of the vomiting of pregnancy the author refers to his monograph, published in 1906, in which he stated that the present knowledge of the subject justified the differentiation of three types of serious vomiting of pregnancy: reflex, neurotic and toxemic. The reflex variety, of course, is dependent on some abnormality elsewhere in the body. The neurotic type he considers allied to hysteria and readily amenable to suggestive treatment. The toxemic variety is associated with profound disturbance of metabolism manifested by characteristic changes in the urine and the presence of definite changes in the liver and kidneys. He refers to the fact that it was first shown in his clinic that the urine in these patients presents a high ammonia coefficient, indicating that a much greater proportion than usual of the total nitrogen is being excreted in the form of ammonia. He shows the difference in the urine in neurotic and in toxemic vomiting by means of charts showing the relative amounts of ammonia and nitrogen.

He discusses at length eclampsia and the theories of its causation and then quotes Zweifel's apt designation of it as "the disease of theories." As Williams says: "Unfortunately, exact knowledge is still lacking." He does not agree with Davis and Edgar that eclampsia is always a preventable condition, though he states that prophylactic treatment is productive of untold good in many instances. In treatment, if the patient is not markedly improved after delivery, he advises bleeding—from 500 to 800 c.c.—the amount of blood withdrawn to be replaced by physiologic salt solution. He has followed out this procedure with good results, even in patients in whom the pulse was thin and weak. He refers to Kronig's employment of lumbar puncture in these cases, but does not comment on it; he also mentions renal decapsulation as performed by Edebohls, but states that it has been done in too few cases to permit of a proper estimation of its value or indications. The value of veratrum viride, he thinks, is much over-rated.

Pubiotomy, Williams believes, will practically displace Cesarean section for borderland cases, though he states that it is not indicated in cases in which the conjugate vera measures less than 7 centimeters. He describes in detail the technic followed in his clinic and reports good results

The book is profusely illustrated and a complete bibliography is appended to each chapter. It is commended as one of the most practical text-books on obstetrics.

DIE PRÜFUNG NICHTOFFIZIELLEN PRAPARATE Part I. Von Dr Gustav Mossler. Cloth. Pp. 133. Vienna: Carl Fromme.

The need of an impartial and disinterested description of the synthetic proprietaries and those definite chemicals which are not proprietary, but have been too little used or too recently introduced to secure a place in the Pharmacopeia, is quite generally felt, since these remedies should be brought to some sort of official standard. What has been inaugurated by the medical profession in this country by the formation of the Council on Pharmacy and Chemistry has been carried out in other countries under the auspices of the pharmaceutical authorities. Thus we have the publication of the British Codex under authority of the Council of the Pharmaceutical Society of Great Britain and the work undertaken by the pharmaceutical institute of the University of Berlin. Professor Mossler's position gives a certain authoritative character to his work. The book is intended primarily for the pharmacist as a guide in the examination of synthetic and unofficial chemicals as to their identity and purity. Nothing is said in the body of the work of pharmacologic actions or therapeutic uses. Some of the preparations are official in the U. S. Pharmacopeia. The preparations are listed alphabetically by their chemical names, the proprietary name being given a subordinate place. The information of the body of the work is supplemented by several important tables, one giving common names and, very briefly, therapeutic characters, a second being a list of the non-official reagents, the third, a bibliography, the fourth, a list of patents and trademarks. This volume constitutes the first part of the work and it is the intention of the author in the second part to introduce the remedies and preparations which have appeared since the publication of the first part and to omit those the use of which has been discontinued. The work appears to be well done and to merit the support and the approval of both the medical and pharmaceutical professions.

ESSENTIALS OF DIETETICS By Amy Elizabeth Pope, Instructor in Dietetics in the Schools of Nursing of the New York Hospital, and Mary L. Carpenter, Director of Domestic Science of the Public Schools, Saratoga Springs, New York Cloth Pp 249. New York: G P Putnam's Sons, 1908

In the preface the authors state that they have kept in mind three guiding principles: 1, That the book should be adapted in plan and scope to the needs of nursing schools; 2, that it should make a useful dietary guide for the home; and 3, that it should be sufficiently comprehensive to include essential, without being so large as to bewilder by the inclusion of unessential information. After giving the necessary fundamental definitions regarding the classification of foods—nitrogenous, non nitrogenous, carbohydrates, etc.—the authors discuss milk, eggs, fish, meat and plant foods, a chapter being devoted to each of these subjects. In the chapter on dietaries are considered methods of measuring heat, food values, calculating dietaries, etc, and it also includes several practical tables. "Feeding of Infants and Children," and "Diet in Disease" each occupies a chapter. The rest of the book is devoted to miscellaneous matter relating directly to the subject and includes a large variety of recipes, methods of cooking, etc. Keeping in mind the object of the book and those for whom it is intended, it is in every way satisfactory. While the book is not written for the medical profession, physicians will find in it many useful suggestions and much practical information.

DISEASES OF THE NERVOUS SYSTEM By H Campbell Thomson, M D (Lond), F R C.P, Dean of and Medical Tutor in the Middlesex Hospital Cloth Pp 480 with illustrations Price, $2 75. Chicago: W T Keener & Co, 1908.

This book is of convenient size and shape, although not large, covers an extensive subject very completely and is altogether abreast of the times. It is well written, the descriptions in it being clear and full, but without unnecessary verbiage.

The introductory section is devoted to the structure of the nervous system and to reflexes, rigidity, contractures, electrical reactions and lumbar puncture; the next, to diseases of peripheral nerves, while the following sections deal with the structural and functional diseases of the cord and brain.

The illustrations are numerous and well selected. Many are from the author's own collection, and others were supplied by Pierre Marie. Nervous diseases, better than many others, can be illustrated by well-selected photographs. The author has been fortunate in his selection: while a few are not so well produced and printed as could be desired, all are characteristic.

This is a good text-book for students and an excellent reference book for practitioners. It is, moreover, not so large but that a practitioner wishing to refresh his knowledge of nervous diseases can do so quickly.

THE OPERATIONS OF SURGERY By Jacobson and Rowlands, Vol. I. Upper Extremity, Head, Neck and Thorax Cloth. Pp. 926. Price, $6 00 Vol. II Abdomen, Lower Extremity and Spine. Cloth. Pp 1139. Price, $6 00 Philadelphia: P. Blakiston's Son & Co, 1908

This work, now in its fifth edition, has undergone a steady enlargement and improvement from the first. The first edition appeared as a single modest volume; the second as a large volume; the third as two small volumes; the fourth as one small and one large volume and now the fifth edition as two large volumes, of nearly 1,000 pages each. The special feature of this work which makes it so valuable in addition to the operative technic is the vast amount of instructive information concerning the indications for and the results of the various operative measures described. In this respect the work has stood at the head of its class and it is with profound regret that one reads in the preface that "Hereafter, if further editions be called for the pen that is responsible will be in other hands." As we have reviewed the work in detail previously further comment is unnecessary.

[illegible] By Dr. Ernest Fuchs, Professor [illegible] ity of Vienna. Authorized trans[illegible] and greatly enlarged German edition with numerous additions by Alexander Duane, M.D., Surgeon Ophthalmic and Aural Institute, New York, with 441 Illustrations. Philadelphia and London: J. B. Lippincott Company.

This text-book has been referred to by reviewers as the "Bible of Ophthalmology." This new edition is the same complete work that former editions have been. One notices some changes due to recent advances in general medicine and in the specialty of ophthalmology. The editor of the American edition has made additions to the chapters on external eye muscles and refraction which are important, giving as they do the views of a competent and conservative American ophthalmologist. These additions can be recommended particularly to the younger American students of ophthalmology and to foreigners, many of whom have obtained a wrong idea of our views on these subjects.

INSOMNIA AND NERVE STRAIN. By H. S. Upson, M.D., Attending Neurologist to the Lakeside Hospital, Cleveland, Ohio. Cloth. Pp. 142, with Skiagraphic Illustrations. Price, $1.50. New York: G. P. Putnam's Sons, 1908.

The following list of topics discussed in these pages will give some idea of the contents of the volume: Illustrative Cases, Sleep and Fatigue, Emotions, Subconscious Sensory Reflexes, Atavistic Symptoms, Derangements of Formal Thought, Inductive Inhibition, Convulsive Seizure and Chronic Spasms, Vascular Potential, Mechanism of the Vasoneural Circuit, Nutrition and Vitality, Cell Potential in Evolution, Epicritic Neuropsychoses, Prognosis, Therapy, Predisposition and Heredity.

Something more than one fifth of the volume is devoted to "illustrative cases" of insomnia, melancholia, hysteria, mania, neurasthenia, dementia præcox, etc., in which the patients were cured by removal of impacted teeth. Unfortunately, the condition of patients long after this treatment is rarely detailed by the author, but the cases are dismissed with the statement that they remained well. Many of these cases are illustrated by skiagraphs of the jaws and teeth. The treatment is novel and awakens doubt in the minds of most readers. However, there is no doubt of its efficacy in the author's mind. This portion of the book is the most noteworthy.

The author does not substantiate the claim that he has effected cures in the many cases described of the diseases enumerated above by removing the cause of the troubles by pulling teeth. That relief has sometimes been effected is doubtless true, for many such cases are relievable and often curable by suggestion and by nervous and mental shocks of various kinds. But that impacted teeth were really causative of the disorders named is very doubtful.

WHY WORRY? By George Lincoln Walton, M.D., Consulting Neurologist to the Massachusetts General Hospital. Pp. 275. Cloth. Price, $1.00. Philadelphia: J. B. Lippincott Co., 1908.

Why worry? That's the question! And sometimes it is a most difficult one to answer. While this is the title of the book before us, it would have been more appropriate to have used the imperative "don't worry," which exhortation, however, would be as difficult to obey as the question is hard to answer. But this book tells us not only why we should not worry, but how to avoid worrying. It is an axiom that most of our troubles, mental as well as physical, are imaginary and consequently can be avoided if we only will it so. This is the keynote of the book; it is applied to every day affairs, to social and business worries as well as to physical. A chapter is devoted to hypochondria, another to neurasthenia and another to sleeplessness and to other purely medical topics. The chapter on sleep is a most sensible one and could be read even by physicians with decided profit. We are told that, as a rule, the loss of sleep is not harmful, in and of itself, but that worrying about it is what plays the mischief. Worrying because one can not sleep exaggerates not only the cause but the effect. The book is full of sound philosophy and common sense. While it is written for the layman the physician may read it with profit to himself and will find in it many hints that will be helpful in his practice.

PHYSICAL SIGNS OF DISEASES OF THE THORAX AND ABDOMEN. By James T. H. Sawyer, M.A., M.D. Oxon., M.R.C.P. Lond. Pp. 188. Cloth. Price, $2.00. New York: William Wood & Co.

There is nothing novel in the subject matter of this book or in the method of treating it. Inspection, palpation, mensuration, succussion, percussion and auscultation of the thorax and abdomen are described accurately, and what can be learned from these methods of examination is fully stated. The causes of the phenomena demonstrated by physical examination in health and disease are given with theoretical explanations. The illustrations, which are mostly diagnostic, are useful, and many are in part or wholly original.

Miscellany

Typhoid in Ireland.—According to the consular reports, that for a number of years there has been an unexplained prevalence of typhoid fever in Belfast, attended by serious mortality, notwithstanding the excellent water supply and the enforcement of many sanitary precautions. So persistent was the succession of cases that the disease might be said to be endemic rather than epidemic in form. The local government board for Ireland determined to make special inquiry as to its cause and in February, 1907, appointed a commission for that purpose. This commission was directed to investigate thoroughly not only the unexplained prevalence of enteric fever but also every matter bearing on the public health of Belfast. This work engaged the members until recently, and the report of the commission has now been made public. The commission found that the mortality from this cause during the past 25 years in Belfast has been so great that no other city or town of the United Kingdom has ever approached it. During the years 1900, 1901 and 1902 the annual death rate from this disease was 0.72 per 1,000 of population in Belfast as compared with 0.34 in Dublin, 0.13 in Manchester, and 0.15 in England and Wales. The continuous prevalence of this disease has been contemporaneous with improvements in the water supply and in the general sanitary condition of the city. The most manifest facts regarding it ascertained by the commission were that it affected the working classes rather than the wealthier population, and that the Jewish residents of the city were practically exempt. Dr. L. W. Darra Mair, medical inspector of the local government board for England, was asked by his fellow members to devote himself to investigating the causes of the disease prevailing under these conditions. His conclusions were adopted by the commission as part of its report. The commission completely absolved the local water supply. One limited outbreak was traced to infected milk, but the endemic prevalence of the disease was shown to be due to the unrestricted gathering of cockles, mussels and other shellfish from the "slob lands" of Belfast Lough, which are laden with the city's sewage. Hundreds of acres are exposed at low tide and the shellfish are gathered by the poorer classes, being eaten chiefly raw. The exemption of the Jews was due to their refusal to eat these molluscs. The evidence on which these conclusions are based is fully set forth, with the urgent recommendation that "as no system of sewage treatment within practicable limits of cost will fully safeguard the lough shellfish powers should be obtained to prohibit the gathering of the same for human consumption."

Pasteurized Milk an Economic Factor.—In his recent address to the students at Heidelberg Nathan Straus pointed to the fact that the old theorizing indifferent arm chair phase of political economy has passed and its students find that it is concerned with all sorts of positive facts, which must be learned by patient investigation. It is not strange then to find students of political economy listening to a lec time in an experimental milk laboratory. Straus discusses the economic importance of infant mortality and its relation to the milk supply. He also adopts v. Behring's view that tuberculosis is chiefly acquired by alimentary infection in infancy and hence the milk supply becomes doubly important. The ideal remedy—breast feeding—is unattainable at present. In a town like Berlin more than two thirds of the babies have to be bottle-fed. The production of pure milk from a bacteriologic standpoint involves an expense that necessitates a prohibitive price (15 cents a quart). The only practicable remedy is pasteurization, and this has been shown not only to be feasible on a large scale, but very effective in the reduction of infant mortality. Straus reviews the objections to pasteurization and shows that they are either unfounded or of little moment. He reviews his own efforts in popularizing the use of pasteurized milk for infant feeding, and gives an account of his recent experiment in the village of Sandhausen, near Heidelberg, where the mortality of children under 1 year was 46 per cent. previous to his establishment of a laboratory to furnish pasteurized milk. He says: "We have now the record for June—the first month of the harvesters of infant lives—and so far my prophecy has come true. In the five months ending June 30, only 7 children under 2 years have died, as against 24, the average for the same five months of the last five years." According to Straus' observation, the handling of market milk in Germany is not ideal: "Even big dealers are singularly lax, *from an American point of view*, in this matter. I see even superior bottled milk being hauled through the streets with nothing better than a thin cloth to protect it from the glaring sun. I greatly fear that in this country less attention is bestowed on the milk than on the beer. You keep that cool while it is traveling and after reaching the place of consumption, and leave the milk too often to take care of itself. Truly, there is *something to be learned* from brewers and landlords."

The Economic Cost of Disease.—The department of medical economics of the *Ohio State Medical Journal* for July contains the following interesting item: "The Bense bill enacted last winter gives authority to the State Board of Health to require of cities the purification of sewage and the public water supply. This law has much power for good. Physicians in every state should urge its enforcement if necessary to secure pure water. . . . Seven hundred and forty-eight cases of typhoid fever were reported to the Columbus board of health for April, 1908. Allowing 10 per cent. of deaths and $10,000 for the economic value of a human life; $2 a day as the earning capacity for only half the afflicted; $10 a week for nursing; $125 for average funeral expenses and $50 for medical services, all very low estimates, the cost would be as follows:

"Seventy five deaths .	$ 75,000.00
"Loss in earnings . . .	26,928.00
"Funeral expenses . .	9,375.00
"Medical services	37,400.00
"Nursing	44,800.00
"Total...	$193,503.00"

In a word, the bill for typhoid fever *for the city of Columbus* for one month is nearly $200,000. This is really a minimum estimate and the real figures are probably considerably higher. Drinking water contaminated with sewage is not only a dirty habit, but an expensive one.

Pathogenesis of Eclampsia.—U. Fernandez has been publishing in the *Semana Medica* his experimental research on the internal secretion of the decidua serotina. The conclusion, in the issue, May 21, gives 52 microphotographs of the findings. Subcutaneous injection of placental elements from an animal of the same species induced in gravid guinea-pigs a pathologic condition closely resembling puerperal eclampsia, in both clinical and anatomic manifestations. When the injections induced such a reaction that the animal cast her young, there was no tendency to convulsions. Simultaneous injection of liver tissue or of thyroid gland seemed to have a retarding, a neutralizing action on the placental poison injected. The experiments seem to establish beyond question the existence of an internal secretion in the decidua serotina. Also that placental elements are deported from the placenta into the maternal circulation. Further, that these elements induce defensive processes in the blood, revealed by phenomena of hemolysis and syncytiolysis. Also that these phenomena of syncytiolysis liberate the eclamptic poison which then displays its dreaded action on the maternal organs, inducing the clinical picture of eclampsia.

Prophylaxis of Hydatid Cysts.—Two years ago a committee was appointed by the minister of agriculture in Argentina to devise means to reduce the prevalence of echinococcus disease. *Among the measures proposed* by the committee are placarding the walls with posters showing the various phases of evolution of the scolex and of hydatid cysts in man and its mode of propagation, with warnings against drinking unboiled water or uncooked vegetables from sources liable to be polluted, against allowing sources to become polluted, and, above all, warning against dogs, urging restriction of their number, and that they should not be allowed access to uncooked meat. The *Tænia echinococcus* seems to be unable to complete its life cycle outside the body of the dog. The committee also advises that a pamphlet portraying the dangers of echinococcus affections and measures for prophylaxis should be distributed with each dog license, and that no dogs should be allowed in slaughter houses, and that all vagrant dogs should be killed. The chairman of the committee is Dr. D. J. Cranwell, director of the *Revista de la Sociedad Medica de Argentina*, which reproduces in its last issue the educational posters designed for prophylaxis.

Lumbar Puncture in Epilepsy.—F. Tissot, in *Progrès Méd.*, May 9, 1908, reports the results of a series of experiments to estimate the therapeutic value of lumbar puncture in epilepsy. Six patients were under observation for periods varying from 34 to 55 days, during which time they received from 8 to 15 punctures, in which an average quantity of 36 c.c. was abstracted from the cerebrospinal fluid. The pressure was generally high. The results are not favorable to the utility of puncture in this disorder; the attacks were not modified; very often they occurred a few hours after the puncture, showing that the withdrawal of even large amounts of fluid (sometimes as much as 60 or 70 c.c.) had no special effect in preventing the convulsion. No bad symptoms followed the operations except slight headache, quickly relieved by lying down. Tissot has never observed any troublesome results from this measure, wherever employed, for diagnostic or therapeutic purposes.

Diagnosis of Tabes.—R. Burnand, in the *Revue Médicale de la Suisse Romande*, xxviii, April 20, 1908, discusses the differential importance of the unilateral absence of the knee-jerk, relating a case in which this was observed. The patient had suffered from attacks of dyspepsia every month or two, with repeated vomiting, and he applied to the physician merely for relief from these dyspeptic disturbances. A day or so before these attacks he always had transient pain in the back, which he had learned to recognize as a premonitory symptom of the "dyspepsia." Lymphocytosis was found on lumbar puncture, confirming the assumption of tabes. The patient's constant and violent use of the right knee in his trade as a rope maker had evidently localized the trouble in the corresponding portion of the spinal cord. The lumbar puncture seemed to have a favorable effect on the gastric crises, as they did not return afterward while the patient was under observation.

Ammonia Coefficient in Urine.—Hopkins, in the *Bulletin of the University College of Medicine*, Richmond, Va., July, describes a method of determining the ammonia coefficient by direct nesslerization. The ammonia is determined by diluting the urine volumetrically until the ammonia nitrogen in the dilution is between 0.001 and 0.02 mg. per c.c. A definite portion of the dilution is nesslerized, and the ammonia nitrogen in 1 c.c. of urine computed. The total nitrogen is estimated in the same manner, first reducing the organic nitrogen to ammonium sulphate by the Kjeldahl process. The ratio between the amount of ammonia nitrogen and total nitrogen thus determined is taken as the ammonia coefficient; as there is a possible error of 10 per cent. in the method, Hopkins concludes that it is applicable to the determination of pathologic variations only. For this purpose it answers the requirements. It is sufficiently accurate to determine variations of clinical importance and has great advantages in its rapidity and in the simplicity of technic and apparatus used

The Nostrum Campaign.—The fight against the nostrums continues to gain recruits even among journals in no way connected with the Association In its issue for March the *Journal of the Allied Societies*, a New York dental journal, thinks that the time has come for the dental profession to take its stand for ethical medicine," and says that it 'has decided to take its place with the American Medical Association's JOURNAL and others that are opposed to nostrums" To this end it announces its adoption of the two rules to apply to its advertising pages in respect of all remedial and prophylactic preparations, which are practically Rules 1 and 8 of the Council on Pharmacy and Chemistry As basic principles these rules cover the essence of the struggle The other rules are more in the nature of detailed applications to avoid the evasion of the former

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed Queries for this column must be accompanied by the writer s name and address but the request of the writer not to publish name or address will be faithfully observed

BOOKS ON "CHRISTIAN SCIENCE"

PRINCETON KY, Aug 17, 1908

To the Editor —Will you please advise me as to the best work on the subject of Christian Science exposed from a medical point of view If you can also furnish any other information I shall appreciate it Quote prices on these books if convenient to do so

CHARLES J POLLARD

ANSWER —We do not know of any book that can be said to fulfill our correspondent s requirement, namely, an expose of Christian Science from a medical point of view There are four aspects from which the subject must be regarded by those who would study it critically 1 as a system of philosophy, 2 as a religion, 3 as a mode of healing and 4 as an organization having vast political social and economic significance The theoretic or didactic side of Christian Science as a mode of therapeutics has to be considered in reference to the first and second divisions above made namely philosophy and religion The practical results in the application of its therapeutic claims constitute what we understand our correspondent to mean when he asks for a medical expose of the subject The only systematic investigations of actual cases of which we are aware are

1 The *Medical News* Investigations into the Claims of Christian Science By J B Huber M D *Medical News*, New York Jan 21 28 Feb 24 and 11 1899 This is an investigation as to the correctness of the alleged facts in 20 patients who claimed to have been cured by Christian Science treatment All cases offered were examined

2 One Hundred Christian Science Cures By Richard C Cabot, M D *McClure s Magazine* August 1908

With regard to the study of the subject in general the following list though not exhaustive may be serviceable

Christian Science By Mark Twain New York Harper Bros, 1907 Cloth Pages 362 Price $1 75 With all its humorous word clothing this book is nevertheless a serious consideration of the subject under heads 1, 2 and 4 of the above classification The socio politico economic aspect is particularly strongly emphasized

Christian Science, the Faith and Its Founder By Lyman D Powell New York G P Putnam's Sons, 1907 Cloth Price, $1 25 net

Christian Science By William A Purrington New York E B Treat & Co, 1900 Cloth Pages 194 Price $1 00 This book deals largely with the medicolegal aspects

Mary Baker G Eddy The Story of Her Life By Georgine Milmine a serial in *McClure s Magazine*, commencing January, 1907 ending October, 1907 This is really a biography of Mrs Eddy and a history of the rise and development of Christian Science, drawn from facts of public record, documents, first hand testimony etc It is not argumentative, though the general tendency of the facts adduced is inevitably of the character of an impeachment

The Passing of Christian Science By C G Harger, Jr Buffalo N Y D T Stoddard, 367 Washington street, 1899 Cloth Pages, 91 This brochure consists of two parts 1 Christian Science as a Religious Belief, 2 Christian Science as a Means of Physical Healing To this is added a useful dictionary of curious and eccentric beliefs

Crazes Credulities and Christian Science By C M Oughton, M D Chicago F H Colgrove, 1901 Cloth Pages 121 Price $1 00

Christian Science Medicine and Occultism By Albert Moll M D (Berlin) Translated by F J Rebman London Rebman Limited, 1902 Paper Pages, 47 Price, sixpence (Twelve cents) (Rebman Company 1123 Broadway, N Y) This is an excellent statement from the neurologist s point of view

Valid Objections to So called Christian Science By Rev A F Underhill New York Edwin S Gorham Fourth avenue and 22nd street, 1902 Paper Pages 49 This pamphlet discusses the questions Is Christian Science Christian? Is Christian Science Scientific? and deals with Systematic Knowledge *vs* Speculation, Results Ethical and Moral, and Results Physical and Hygienic

The Christian Science Delusion By Rev A C Dixon, Boston W H Smith, 25 Stanhope street 1903 Paper Pages, 52 A critical examination of the theoretic basis of Christian Science

Christian Science Dissected By A O Sector St Louis, Christian Publishing Co, 1900 Paper, pages 61

Christian Science A Sociologic Study By Charles A L Reed, M D Cincinnati McClelland & Co, 1898

In addition to the foregoing we must mention a book that will certainly throw great light on the subject for those not specially versed in psychology and will elucidate the actual inwardness of whatever vitality Christian Science may possess and show what it really consists in as distinguished from the claims made for it, and the explanations given of it

Religion and Medicine The Moral Control of Nervous Disorders By Ellwood Worcester D D Samuel McComb D D, and Isador H Coriat M D New York Moffat, Yard & Co Cloth 1908 Pages, 416 Price $1 50 This book was written as an exposition of what is known as the Emanuel movement and is not specifically directed against Christian Science A perusal of it however, will prove invaluable in studying the subject

Another book of considerable utility as an explanatory sidelight is The Force of Mind or the Mental Factor in Medicine By A T Schofield M D Philadelphia P Blakiston s Sons, 1902 Cloth pages 309 Price $2

No man can effectively combat any position unless he first makes himself master of what that position really is The best and most tangible—indeed the only—exposition that we have seen of the nature of Christian Science philosophy in terms that render it susceptible of critical and logical examination as a system of philosophy is an article entitled The Outer World and The Inner Man by Martha R White, *Christian Science Journal*, March, 1908 Every one who wishes really to gauge, as a wise soldier should do, the strength of the enemy, will find in this exposition what we conceive to be the best argument on behalf of a true philosophic basis for Christian Science that can be brought forward But leaving this academic discussion to the philosophers the utter immateriality of the nature of ultimate realities to the facts of every day life is tersely and forcibly expressed in an article on

The Philosophy of Christian Science By Borden P Bowne, LL D of Boston University Originally published in the *Christian Advocate*

FORMALDEHYD IN MILK ITS DETECTION AND ITS HARMFULNESS

HAGERSTOWN MD, Aug 19, 1908

To the Editor —1 Will you give reliable tests for formaldehyd in milk and state the sources of possible error in making the tests? 2 Is the presence of formaldehyd in milk considered injurious to infants and children, and what symptoms does it produce?

A C MAISCH

ANSWER —1 The most reliable test for the detection of formaldehyd in milk is that based on the color which is formed when concentrated sulphuric acid (Hehner s test) or hydrochloric acid (Leach s test) containing a trace of iron is added to milk containing formaldehyd

Hehner s Test To a few cubic centimeters of concentrated sulphuric acid, to which a trace of some ferric salt has been added add the milk to be tested so as to form a distinct layer on top of the acid and allow to stand If formaldehyd be present, even one part to a million of milk, a violet coloration will take place at the junction of the two liquids

Leach's Method Dilute the milk with an equal volume of water and add for each cubic centimeter of the diluted milk 1 c c of concentrated hydrochloric acid containing 1 c c of 10 per cent ferric chlorid solution to each 500 c c of acid The mixture is heated in a casserole over the bare flame to 80 or 90° C rotating to break the curd which forms If formaldehyd be present, a violet color will appear.

2. The presence of formaldehyd in milk is generally considered injurious to infants and children. On the other hand, some experimental observers have concluded that in the small quantities used in preserving milk (from 1 to 50,000 to 1 to 20,000) formaldehyd prevents the development of the more common bacteria without interfering with the digestibility of the milk. A full review of this subject may be found in Bulletin No. 41 of the Hygienic Laboratory, U. S. Public Health and Marine-Hospital Service, from which we quote: "It may be said, finally, however, that the medical and scientific opinion is decidedly against the use of preservatives in milk, not only on account of possible injuries, especially to young children, resulting from the continued use of such preservatives in small amounts, but also for the reason that the use of such substances, if permitted, would ultimately tend to carelessness and uncleanliness in the handling of milk."

The principal objection made to the use of formaldehyd in milk is that it impairs the digestibility of the milk and tends to injure the digestive organs. It renders the milk less easily coagulable by rennin. Immediate symptoms which could be attributed with certainty to the presence of formaldehyd in the milk do not appear to have been observed.

RESUSCITATION AFTER DROWNING.

Superior, Neb., Aug. 6, 1908.

To the Editor:—I would like to see a discussion of the following points:

1. What is the longest authentic time that a body has lain under water and been resuscitated after removal?

2. If, on recovering a body from the water there is no heart beat perceptible to auscultation, will treatment avail anything, and if it should, is it not positive proof that the heart had not stopped?

3. How long should efforts at resuscitation be continued in hopeful cases?

J. G. Walker.

Answer.—The effect of immersion in water depends on whether the person remains conscious and attempts to breathe or whether syncope occurs and breathing stops. In the first case death occurs in 1 to 5 minutes after water has entered the lungs. The power to remain under water without breathing varies considerably and is somewhat improved by practice. According to Draper ("Legal Medicine"), the longest time on record is that of Professor Enochs, namely, 4 minutes 46½ seconds. Draper also cites a report to the United States Life Saving Service of the resuscitation of Stanley S. Holmes, 5½ years old, after an immersion of 25 minutes. The resuscitation produced signs of life at the end of 45 minutes. Draper states that this is the longest time on record. In this case it is probable that syncope occurred and respiration ceased so that no water entered the lungs.

2. If in a case of drowning the heart has actually stopped beating, it is safe to say that the patient is dead and beyond resuscitation, but it must be remembered that the heart beat may be so feeble and indistinct as to be imperceptible even to the most expert auscultator. Hence, one is liable to think that the person is actually dead when such is not the case.

3. From the above it will be seen that apparently hopeless cases may be hopeful ones, therefore efforts of resuscitation after drowning should be persevered in for several hours unless signs of death are positive. Cases are on record in which persons have been restored only after efforts had been continued for over four hours.

PRECIPITIN TEST FOR HUMAN BLOOD.

Aug. 15, 1908.

To the Editor:—Please give the precipitin test for the identification of human blood.

B. J. A.

Answer.—A rabbit is injected intraperitoneally with 10 c.c. of human blood serum at intervals of a few days until from 6 to 8 injections have been given so that there is formed in the animal's blood a substance that will produce a precipitate in diluted human blood serum. The animal is now allowed to rest for a week, after which its blood is drawn and the serum obtained. The blood to be tested, if fresh, is diluted 100 times, but if dried, the material is soaked with distilled water and the filtered solution is mixed with an equal volume of double normal salt solution (1.2 to 1.8 parts of sodium chlorid to 100 parts of water). To the clear solution thus prepared a few drops of the serum of the immune animal are added and the mixture allowed to stand to see whether a precipitate will occur. If the material contains human blood, a precipitate will occur within half an hour. The precipitin is specific for human blood as distinguished from that of other animals except those of the ape family. Occasionally the blood of the domestic animals will give some haziness if not sufficiently diluted. The serum of the rabbit may be dried and retain its precipitating power for about six weeks. Such dried serum is dissolved from the filter paper, on which it has been dried, by means of a little normal salt solution, filtered if necessary, and used as described above.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, United States Army, for the week ending Aug. 22, 1908:

Reasoner, M. A., first lieut., M. C., granted leave of absence for twenty-four days.

Tefft, William H., capt., M. C., having completed the duty for which he was ordered to Washington, D. C., will return to station in Cuba.

LeWald, Leon T., capt., M. C., granted twenty-five days leave of absence.

Woodruff, Charles E., major, M. C., granted three months leave of absence.

Bruns, Earl H., first lieut., M. C., will, upon the expiration of his present leave of absence, proceed to Fort Monroe, Va., for station and duty.

Culler, R. M., capt., M. C., relieved from duty at Fort Monroe, Va., and ordered to Fort Logan H. Roots, Ark., for station and duty.

Webb, W. D., capt., M. C., granted four months leave of absence, to take effect about Sept. 1, 1908.

Barney, Fred M., first lieut., M. R. C., granted thirty days' leave of absence.

Torney, George H., colonel, M. C., ordered to proceed at once from San Francisco to Alascadero Ranch, Cal., for duty in connection with laying out camp and sanitation of same.

Wilson, Elsworth, first lieut., M. R. C., relieved from duty Dept. Rifle Range, Cal., on completion of target practice and ordered to Fort Rosecrans, Cal., for temporary duty.

Snyder, H. McC., first lieut., M. R. C., relieved from temporary duty at Fort Rosecrans, Cal., and ordered to return to San Francisco, and resume duty at the Army General Hospital.

Shortlidge, E. D., capt., M. C., granted fifteen days' leave of absence.

Wells, Frank M., Card, Daniel P., Bowman, M. H., Chamberlain, G. E., first lieuts., M. R. C., ordered to active duty in the service of the United States.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Aug. 22, 1908:

Diehl, O., surgeon, detached from the Navy Yard, Philadelphia, and ordered to the *Charleston* and to additional duty as fleet surgeon of the third squadron, Pacific Fleet.

Gates, M. F., surgeon, detached from the *Charleston* and ordered to the Navy Yard, Philadelphia.

McDonnell, W. N., P. A. surgeon, detached from duty in connection with the Navy Rifle Team, Camp Perry, Ohio, and ordered to the Navy Recruiting Station, Minneapolis.

Lando, M. E., asst.-surgeon, detached from the Navy Recruiting Station, Minneapolis, and ordered to Washington, D. C., September 14, for examination for promotion, and then to wait orders.

Bishop, L. W., P. A. surgeon, ordered to temporary duty at the Navy Recruiting Station, New York.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Aug. 21, 1908:

SMALLPOX—UNITED STATES.

California: Oakland, July 1-31, 2 cases; San Francisco, Aug. 2-8, 5 cases; Stockton, July 1-31, 1 case.

Idaho: Carey, May 21-Aug. 4, 21 cases.

Indiana: Fort Wayne, Aug. 2-8, 1 case; Indianapolis, Aug. 3-9, 7 cases; Jeffersonville, July 1-31, 5 cases; Lafayette, Aug. 4-10, 2 cases.

Missouri: Kansas City, Aug. 2-8, 1 case; St. Joseph, 3 cases.

New York: Schenectady, June 1-30, 2 cases.

Ohio: Canton, June 6-13, 1 case; Dayton, Aug. 2-8, 2 cases; Toledo, 1 case.

Oregon: Portland, July 1-31, 47 cases.

Washington: Spokane, Aug. 2-8, 2 cases.

Wisconsin: LaCrosse, Aug. 2-8, 15 cases; Manitowoc, 1 case.

Utah: Salt Lake City, July 1-31, 10 cases.

SMALLPOX—FOREIGN.

Arabia: Aden, July 20, 3 deaths.

Argentina: Buenos Aires, May 1-31, 2 deaths.

Austria: Silesia, July 19-25, 4 cases.

Borneo: Sandakan, May 1-31, 37 cases, 13 deaths.

Brazil: Pernambuco, June 1-30, 55 deaths; Rio de Janeiro, July 8-16, 1 case, 1 death, on steamship *Peruviana*.

Ceylon: Colombo, June 28-July 4, 7 cases, 2 deaths.

China: Hongkong, June 28-July 4, 4 cases, 2 deaths.

Ecuador: Guayaquil, June 28-July 11, 6 deaths.

Egypt: General, June 26-July 8, 44 cases, 44 deaths; Cairo, July 16-22, 2 cases, 2 deaths.

India: Bombay, July 8-14, 11 deaths; Calcutta, June 28-July 4, 5 deaths.

Indo-China: Cholen, June 28-July 4, 2 cases, 2 deaths.

Java: Batavia, June 28-July 4, 5 cases.

Peru: Lima, July 13, 5 cases in the lazaretto.

Portugal: Lisbon, July 19-25, 2 cases.

Russia: St. Petersburg, July 12-18, 29 cases, 5 deaths.

Spain: Barcelona, July 21-31, 1 case; Valencia, July 19-Aug. 1, 6 cases, 1 death.

Turkey in Asia: Bagdad, June 22-July 4, 14 cases, 12 deaths.

Turkey in Europe: July 20-26, 9 deaths.

Zanzibar: June 7-14, 1 death.

CHOLERA

Ceylon: Colombo June 25 July 4 14 deaths
India Bombay, July 1 14, 1 death; Calcutta June 28 July 4, 29 deaths, Madras June 5 10, 13 deaths
Indo China Cholen June 28 July 4, 20 cases 20 deaths
Russia Astrachan July 21 Aug 6 51 cases 24 deaths
Saratov Aug 6 14 cases 2 deaths
Zarizyn July 24 Aug 6, 96 cases, 55 deaths

YELLOW FEVER

Brazil Pernambuco June 15 30, 1 death
Cuba Daiquiri Aug 1 8 2 cases, 1 death
Ecuador Guayaquil June 28 July 11, 3 deaths
Martinique Port de France Aug 17, present
Mexico Veracruz Aug 14, 1 case

PLAGUE

Brazil Pernambuco June 1 15, 1 death
British East Africa Port Florence June 11 26 6 cases 4 deaths
Chili Antofagasta July 12, 3 cases, Arica July 15, 1 case, Iquique July 14 3 cases
China Amoy, in native city and vicinity July 14, present, Hongkong, June 28 July 4 65 cases, 61 deaths
Ecuador Guayaquil, June 28 July 11, 2 deaths
Egypt, general July 24 30, 21 cases, 7 deaths Alexandria, July 3 28, 10 cases, 3 deaths, Port Said, July 8, 1 from steamship *Orenoque*
India general June 28 July 4, 512 cases, 435 deaths
Japan Kobe, July 12 18, 1 case, Osaka, July 4 11, 2 cases, 2 deaths
Peru general July 7 13, 32 cases, 13 deaths; Salaverry, July 19 1 case
Turkey in Asia Adalia July 27, 2 cases

Public Health and Marine-Hospital Service.

List of changes of stations and duties of commissioned and other officers of the Public Health and Marine Hospital Service for the seven days ended Aug 19, 1908

Kalloch P C surgeon, directed to proceed to the marine hospital Portland Me for special temporary duty on completion of which duty to rejoin his station at Portland (Me) Quarantine station

Magruder G M surgeon, granted leave of absence for 7 days, from Aug 2, 1908, under Paragraph 191, Service Regulations

Wertenbaker C P surgeon directed to proceed to New York, N Y for special temporary duty

Wertenbaker C P surgeon leave of absence granted for 1 month from Aug 9, 1908 amended so as to grant him 14 days from Aug 9 1908

Stimpson W G, surgeon directed to proceed to Tatoosh Island, Washington for special temporary duty on completion of which to rejoin his station at Port Townsend Washington

Oakley, J H P A surgeon directed to assume temporary charge of the marine hospital at Port Townsend, Washington, during the absence of Surgeon W G Stimpson

Holt J M, P A surgeon granted leave of absence for 16 days, from Aug 15, 1908

Vogel C W, P A surgeon directed to report to the Director of the Hygienic Laboratory, Washington, D C, for temporary duty

Schereschewsky J W P A surgeon, granted leave of absence for 1 month from Aug 17, 1908

Fauntleroy C M asst surgeon directed to proceed to the marine-hospital at Mobile Ala for special temporary duty, on completion of which to rejoin his station at New Orleans, La

Wilson J C acting asst surgeon, granted leave of absence for 7 days from Aug 13 1908

Watson Harvey J, acting asst surgeon, granted leave of absence for 30 days from Sept 1 1908

Sinclair A. N acting asst surgeon, granted leave of absence for 25 days, from Aug 12 1908

Delgado, I M acting asst surgeon, granted leave of absence for 3 days from Aug 4 1908, on account of sickness

Keiller W acting asst surgeon granted leave of absence for 7 days from Aug 7 1908

Keiller, W, acting asst surgeon, granted leave of absence for 23 days, from Aug 13, 1908

Mason W C, acting asst surgeon, granted leave of absence for 7 days from Sept 13, 1908

Reimer H B C, acting asst. surgeon, granted leave of absence for 6 days from Aug 10, 1908

Richardson, S W, pharmacist, detailed to represent the service at the meeting of the American Pharmaceutical Association to be held at Hot Springs, Ark, Sept 7 12, 1908 on completion of which duty to rejoin his station at Buffalo, N Y

Roehrig, A M, pharmacist, detailed to represent the service at the meeting of the American Pharmaceutical Association to be held at Hot Springs, Ark, Sept. 7 12, 1908 on completion of which duty to rejoin his station at Stapleton, N Y

BOARDS CONVENED

Boards of medical officers were convened to meet on Aug 24, 1908 for the purpose of making physical examination of applicants for the position of cadet in the Revenue Cutter Service as follows

Washington, D C Asst Surgeon General J M Eager, chairman, Asst Surgeon General J W Kerr, recorder

New York N Y P A Surgeon J A Nydegger, chairman; P A Surgeon C H Lavinder recorder

Chicago, Ill: Surgeon G B Young, chairman, Asst Surgeon C. E Wood recorder

Boston Mass Surgeon R M Woodward, chairman, Asst-Surgeon T. W Salmon, recorder

Baltimore, Md P A Surgeon I T Burkhalter, chairman; Acting Asst Surgeon C W Hughes recorder

Philadelphia, Pa Surgeon J M Gassaway, chairman; Acting Asst Surgeon H Horning recorder

San Francisco Cal Surgeon H W. Austin, chairman, P. A. Surgeon W W. King recorder

Detroit Mich: Surgeon Fairfax Irwin, chairman; P. A. Surgeon M J White, recorder

Portland, Me Surgeon P C. Kalloch, chairman; acting Asst-Surgeon A F Stuart, recorder

Mobile, Ala: Acting Asst Surgeon J O Rush, chairman; acting Asst Surgeon C S Carter, recorder

Galveston, Texas P A Surgeon G M Corput, chairman; acting Asst Surgeon W H Gammon, recorder

Seattle, Wash: P A Surgeon M W Glover, chairman; Asst-Surgeon C W. Chapin, recorder

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC

Organization in the Northwest.

The August number of *Northwest Medicine* contains the address of Dr R C Coffey, president of the Oregon State Medical Association, as delivered before the annual meeting of that body on July 1. Dr Coffey's subject was 'Organization and Centralization of Medicine and Surgery of the Northwest" He first considered organization in general and the present day movement toward medical organization, showing that better organization in every case secured better conditions and results, at an *enormous saving of capital and* energy. Applying this general question to the needs of the medical profession, he then asked 'Is organization possible for the betterment of the health and education of the community and for the establishment of a higher basis for the medical profession?" answering his question by showing that the present medical reorganization movement is a natural process of the times In this connection, he said:

> We have organized ourselves independently of the people and one of the first things we are to consider pertains to combining with our organization the strength of the public for whom we are laboring, if they only know what our aims are . We go before a public gathering or a legislative body, present our claims and give our reasons why the public health of the community demands certain things: we are received with a pitying smile, not because the people are bad or ungrateful, but because they are ignorant of our work, and because we close ourselves up in a shell and refuse to discuss these matters with them, drawing closely about us our cloak of dignity, which is only a relic of heathenism

The remedy *for this condition*, Dr. Coffey found in public education, in which connection he reviewed the addresses made at the Chicago session of the American Medical Association and emphasized the fact that the keynote of all of these papers was the education of the public. He then said:

> In educating the public . . . we must not forget to organize our own affairs or educate our own profession There are three agents in the education of our profession—our schools, our examining boards and our journals. We take the ground that these agents are public service organizations, and that as physicians we have a right to a voice in the management and direction of the policies of these organizations

After reviewing the work of the Council on Medical Education, and the tendency toward the consolidation of medical schools, Dr. Coffey took up the situation as it exists in the Northwest, advising the fusion of the two schools in Oregon, in order that there may be a single, strong medical school in the Northwest He then discussed reciprocity, particularly as it affects the states in question, and also advised the establishment of a journal by the Oregon, Washington and Idaho State Medical Associations, recommending the appointment of a journal committee by these three state associations for the purpose of considering this question.

Dr Coffey's excellent and timely address, with its recommendations, was referred to a committee, which recommended the adoption of the recommendations and the appointment of committees on reciprocity, on the consolidation of medical schools, and on medical journals The action of the Washington and Idaho State Associations and the results of this movement will be watched by all those interested in medical organization in the Northwest. Dr. Coffey's proposals are eminently practical and are in line with the best interests of the profession as a whole and especially of the profession in the three states involved. The active cooperation of these three state associations will go far toward improving conditions in the individual states and will do much to prepare them for the great career which lies before them.

Organization in Southeastern Pennsylvania.

Reports from southeastern Pennsylvania indicate a gratifying condition of energy and activity on the part of the county societies in that part of the state. The Bucks County Medical Society, which until this year met quarterly, now has monthly postgraduate meetings and quarterly general meetings, having divided the county into four sections, the members in each section carrying on the postgraduate work in harmony. A reading course for the coming year has been outlined. The Lehigh County Medical Society recently held an annual assembly, lasting all day. On Wednesday, July 22, a special medical day was held at Willow Grove Park, under the auspices of the county societies of Berks, Bucks, Chester, Delaware, *Lehigh*, *Montgomery*, *Northampton* and *Philadelphia*. Addresses were made by Dr. Albert M. Eaton, president of the Philadelphia County Medical Society, Dr. W. L. Estes, *president* of the Medical Society of the State of Pennsylvania, and Dr. Joseph D. Bryant, past president of the American Medical Association. Special attention has been given by these societies in the past few months to the importance and necessity of medical legislation, particularly to laws regulating the practice of medicine and the establishing of proper hospitals for the insane, inebriates, etc. The work being done is both valuable and gratifying, and will be productive of benefit to the people of the entire state.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

First Month.

SECOND WEEKLY MEETING.

DISEASES OF THE PERICARDIUM.

ETIOLOGY.

Age, sex, seasons. Primary rare. Secondary to rheumatism, *septic processes, acute infections; tuberculosis; pneumonia*, gout and chronic nephritis, traumatism. Pericarditis by extension: pleuro-pneumonia, pleurisy; endocarditis, myocarditis; disease of the thoracic wall and lymph glands.

VARIETIES, PATHOLOGY.

Acute Plastic, Fibrinous.—Pathology.—Extent of involvement, changes in endothelia, exudate, character and amount, terminations, change in heart muscle.

Pericarditis with Effusion.—Secondary to plastic. (a) Serofibrinous: Changes in visceral and parietal layers, character and quantity of exudate. (b) Purulent: Changes in pericardial layers, exudate, organisms usually present. Association with general or local disease. (c) Hemorrhagic: Associated with tuberculosis, malignancy, and in aged. Character and quantity of exudate, pericardial changes.

Adherent Pericardium.—Extent and structure of adhesions, appearance in recent and chronic cases.

DISEASES OF ENDOCARDIUM.

ACUTE SIMPLE ENDOCARDITIS.

Etiology.—Frequency in articular rheumatism. In tonsillitis, scarlet fever, pneumonia, chorea, phthisis. In cancer, gout and chronic nephritis. Rare in measles, diphtheria, chickenpox.

Diagnosis.—Previous history, present illness, effect on pulse and temperature. Physical signs. Recurring endocarditis.

MALIGNANT, PERNICIOUS, ENDOCARDITIS.

Pathology.—Changes occurring in (a) vegetative, (b) ulcerative, (c) suppurative, lesions. Micro-organisms usually found. Mural endocarditis. Associated pathology: primary septic processes; embolism, infarcts, number and location.

Symptoms.—Association with other diseases, temperature curve, pulse, infarctions, progressive anemia, sweats, rashes, physical signs. Diverse clinical pictures; septic type, typhoid type, cardiac group, cerebral group.

CHRONIC ENDOCARDITIS.

Etiology.—Age, constitutional diseases, acute infections, exertion. Influence in production of chronic valvular lesions.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

MASSACHUSETTS Board of Registration in Medicine, State House, Boston, Sept. 8-10. Secretary, Dr. Edwin B. Harvey, Boston.

IOWA State Board of Medical Examiners, Capitol Building, Des Moines, September 16-18. Secretary, Dr. Louis A. Thomas, Des Moines.

NEW YORK State Board of Medical Examiners, Albany, September 22-25. Chief of Examinations Division, Charles F. Wheelock, Albany.

Oregon July Report.

Dr. Byron E. Miller, secretary of the Board of Medical Examiners of the State of Oregon, reports the written examination held at Portland, July 7-9, 1908. The number of subjects examined in was 15; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 61, of whom 23 passed and 38 failed. The following colleges were represented:

College.	Year. Grad.	Per Cent.
PASSED.		
Oakland Coll. of Med. and Surg	(1908)	78.8
College of P. and S., Chicago	(1900) 76.1; (1908)	75.4
Chicago Coll. of Med. and Surg	(1908)	75
University of Louisville	(1895)	75.4
College of P. and S., Baltimore	(1901)	80.9
Johns Hopkins Med. School	(1908)	92
Detroit Coll. of Med	(1896)	78.8
Hamline University	(1908)	81.6
St. Louis University	(1907)	79.8
University Med. Coll., Kansas City	(1908)	81.7
Albany Med. Coll	(1887)	78.7
Omaha Med. Coll	(1897)	79.2
College of P. and S., New York	(1906)	84.4
Willamette University	(1907)	78.8
University of Oregon	(1907) 84.7; (1908)	77.3, 78.6
	(1902)	79
	(1907) 82.2; (1908)	79.9
Queen's University, Kingston, Ontario	(1897)	85
University of Christiania, Norway	(1900)	77.2
FAILED.		
George Washington Univ	(1907) 57.1; (1908)	63.7
Northwestern Univ. Med. School	(1907) 65.6; (1908)	71.2
College of P. and S., Chicago, (1901) 63.7; (1903) 53.2; 1907 69.4.		
Hahnemann Med. Coll., Chicago	(1906)	67.7
American Med. Miss. Coll	(1905)	73
Physio-Med. Coll. of Indiana	(1906)	66.2
Keokuk Med. Coll., Coll. of P. and S	(1907)	*63
University of Iowa	(1907)	69.9
Kansas Med. Coll	(1905)	71.6
University of Louisville	(1907)	55.4
University of Missouri	(1893)	*66.1
Kansas City Med. Coll	(1901)	58.6
St. Louis Coll. of P. and S	(1906) 68.8; (1908)	59
Omaha Med. Coll	(1896)	56.7
Ohio Med. University	(1904)	72.8
Starling Med. Coll	(1908)	69
University of Oregon (1908) 62.3, 62.3, 65, 67.2, 68.9, 70.4, 71, 74.5.		
Willamette University	(1907)	65.3, 65.7, 68.3
Jefferson Med. Coll	(1850) 0; (1886)	66.2
University of Tennessee	(1895)	47.8
University of Vermont	(1905)	69.6
Western University, Ontario	(1894)	61.7
University of Christiania, Norway	(1906)	71.9

*Failed at January, 1908, examination.

Tennessee May Report.

Dr. T. J. Happel, secretary of the State Board of Medical Examiners of Tennessee, reports the written examinations held at Memphis, Nashville and Knoxville, May 5-6, 1908. The number of subjects examined in was 8; total number of questions asked 64; percentage required to pass, 75. The total number of candidates examined was 300, of whom 213 passed, including 55 non-graduates, and 87 failed, including 45 non-graduates. Ten reciprocal licenses were issued. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Birmingham Medical College	(1903)	88.7
Georgetown University	(1896)	79.2
Howard University, Washington	(1907)	84
Yale University	(1906)	92.7
Bennett Coll. of Ecl. Med. and Surg.	(1907)	75
University of Iowa	(1881)	87.3
University of Louisville	(1908)	93
Louisville Med. Coll.	(1904)	78
Louisville and Hosp. Med. Coll.	(1908)	80
Flint Medical Coll.	(1904)	75
Tulane University of Louisiana	(1890) 76; (1899) 90.6, (1905) 90, (1907) 93.1	
College of P. and S., Baltimore	(1900) 88.5; (1907)	84.2
Harvard Medical School	(1908)	76
Tufts College Medical School	(1906)	78.2, 90.7
St. Louis Coll. of P. and S.	(1908)	85
Barnes Med. Coll.	(1908) 75.5, 78, 78, 80, 81, 84, 88, 91, 92, 93, 96	
Cleveland Coll. of P. and S.	(1906)	90.7
Knoxville Med. Coll.	(1906) 79; (1908)	77.5
University of Nashville	(1899) 81; (1905) 79, 85; (1906) 94, (1907) 81.6, 93; (1908) 75, 76, 78, 80, 80, 81, 81, 82, 84, 84, 88, 89.3, 90, 94	
University of Tennessee	(1905) 75, 80, 82.5, (1908) 75, 77, 78, 80, 81, 81, 81.6, 83, 83, 85, 98	
College of P. and S., Memphis	(1907) 79; (1908) 79, 82, 88, 86, 93	
Meharry Med. Coll.	(1899) 77; (1888) 75, (1904) 77; (1906) 75, 76, 85; (1907) 76, 76, 77, 87; (1908) 75, 75, 75, 76, 76, 77, 79, 80, 81, 82, 83, 84, 84, 84, 85, 85, 85, 88, 89, 89.6	
Chattanooga Med. Coll.	(1907) 75.5; (1908) 75.5, 77.2, 80, 82, 84, 87.7, 88, 88.1, 89.7	
Memphis Hosp. Med. Coll.	(1899) 76; (1900) 85; (1902) 78; (1904) 75; (1906) 90, (1908) 77, 79, 80, 82, 82, 83, 85, 85, 88, 90, 92	
Tennessee Med. Coll.	(1907) 85; (1908) 75, 77, 78.1, 81.5, 83.1, 83.5, 84, 85, 86, 92	
Vanderbilt University	(1908) 78, 82, 82, 85, 86, 90, 90, 91, 92, 9,	
University of West Tennessee	(1904) 85; (1907) 76; (1908)	86.6
University of the South	(1906)	86
University of Virginia	(1907)	93
Heidelberg University, Germany	(1888)	91.5

FAILED

College	Year Grad.	Per Cent.
Atlanta School of Med.	(1908)	66
National Med. University, Chicago	(1907)	72.5
Marion Med. Coll., Marion, Indiana	(1896)	63
St. Louis Coll. of P. and S.	(1908)	69
Medical Coll. of Ohio	(1902)	48
Meharry Med. Coll.	(1904) 57, 67; (1905) 61, (1906) 51; (1907) 65, 70; (1908) 67, 69, 71	
University of Tennessee	(1900) 68; (1901) 48; (1906) 62, 68; (1908) 63.1, 72, 73	
Chattanooga Med. Coll.	(1894) 30.6; (1905) 39, 64; (1906) 62, 72.5; (1907) 42, 65; (1908) 65.2, 68, 68.5	
Chattanooga National Med. Coll.	(*)	55.5
Knoxville Med. Coll.	(1904) 69.5; (1905)	67
Memphis Hosp. Med. Coll.	(1908)	69, 71
University of the South	(1905)	64.5
Tennessee Med. Coll.	(1907) 67.5; (1908)	68.7, 71
University of West Tennessee	(1905) 70, (1908)	68.6

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Atlanta Med. Coll.	(1898)	Georgia
Chicago Homeo. Med. Coll.	(1899)	Georgia
Hospital Coll. of Med., Louisville	(1897) (1903)	Kentucky
College of P. and S., New York	(1900)	Georgia
University of Tennessee	(1903) (1904)	Kentucky
Vanderbilt University	(1904)	Kentucky
Chattanooga Med. Coll.	(1900)	Georgia
Milwaukee Med. Coll.	(1899)	Illinois

*Year of graduation in doubt.

Marriages

John Purves, M.D., to Miss Jane Porter, both of Oakland, Cal., August 10.

Walter H. Mayhew, M.D., to Miss Seipp, both of Baltimore, Md., August 5.

Walter Jay Ford, M.D., to Roberta Wimer, M.D., both of Seattle, Wash., July 22.

I. David Lorwy, M.D., to Miss Lilian Aarons, both of Philadelphia, Pa., August 15.

Otis Eisman, M.D., Pittsburg, Pa., to Miss Alice B. Percy, at Atlantic City, August 1.

Thomas P. Lloyd, M.D., to Miss Elsie Jacobs, both of Shreveport, La., August 18.

Samuel H. Durgin, M.D., to Mis Emma Elizabeth Adams, both of Boston, Mass., August 12.

Alfred M. Call, M.D., Rugby, N. D., to Miss Eva Camilla Egeland of Fisher, Minn., June 27.

Solomon C. Katzoff, M.D., Baltimore, Md., to Miss Yetta Berman, at Lancaster, Pa., August 18.

William C. F. Witte, M.D., Milwaukee, Wis., to Miss Ethel Roslyn Bennett of Athelstane, Wis., at Milwaukee, August 5.

William Douglas Macon, M.D., Charlottesville, Va., to Mis Mercy Hunter Sherrerd, at Berkeley Springs, W. Va., August 11.

Arthur N. Tasker, M.D., first lieutenant, Medical Corps, U. S. Army, to Miss Mary Elizabeth Berry of Washington, D. C., August 8.

Garfield L. McKinney, M.D., first lieutenant, Medical Corps, U. S. Army, to Elizabeth Sutton Moore, M.D., of Pittsburg, Pa., August 8.

Deaths

Samuel E. Gillam, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1869; Bellevue Hospital Medical College, New York City, 1878; of St. Johns, Mich.; a member of the Michigan State Medical Society; once president of the Clinton County Medical Society; for several years local surgeon of the Detroit, Grand Haven and Milwaukee Railway, and president of the local board of United States Pension Examiners, died suddenly, August 13, from heart disease, while fishing in a launch on White Lake, Mich., aged 63.

Charles Henry Burr, M.D. Medical School of Harvard University, Boston, 1882; University and Bellevue Hospital Medical College, New York City, 1901; a member of the Massachusetts Medical Society; assistant surgeon to the Manhattan Eye, Ear and Throat Hospital in the eye department, surgeon to the eye and ear department of the Northern Dispensary and clinical assistant to the nose and throat department of the New York Post-Graduate Hospital, died at the home of his wife's parents in South Framingham, Mass., August 13, from nephritis, after an illness of several months, aged 53.

William Buck, M.D. Medical School of Maine, Medical Department of Bowdoin College, Brunswick, 1859; a member of the Maine Medical Association; assistant surgeon and surgeon of the Sixth Maine Volunteer Infantry throughout the Civil War; for a number of terms a member of the board of selectmen and school board of Foxcroft, Maine; a member of the state legislature and treasurer of Piscataquis County, and for thirty-six years United States pension examining surgeon, died suddenly at his home August 9, aged 74.

Joseph Eichberg, M.D. Miami Medical College, Cincinnati, 1879; a member of the American Medical Association; for sixteen years professor of theory and practice of medicine in Miami Medical College, and for twenty-five years visiting physician to the Cincinnati Hospital; a member of the Cincinnati Society for Medical Research and Cincinnati Academy of Medicine, and one of the most prominent practitioners of the city, was drowned August 18 while fishing in Big Tupper Lake, N. Y., aged 49.

Charles McCutcheon, M.D. Rush Medical College, Chicago, 1886; a member of the American Medical Association; for seventeen years resident physician and superintendent of the Fannie C. Paddock Memorial Hospital, Tacoma, Wash.; formerly president of the Washington State Medical Association; one of the best-known practitioners of the north Pacific Coast, died suddenly at Tacoma, August 10, from accidental poisoning by methyl salicylate taken in mistake for sodium salicylate, aged 46.

Peter Evans Hines, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1852; a member of the Medical Society of the State of North Carolina; surgeon in the Confederate service during the Civil War; once president of the state medical society and surgeon general of the state, died at his home at Raleigh, N. C., August 14, aged 80.

John T. Irion, M.D. University of Nashville (Tenn.) Medical Department, 1872; a Confederate veteran; for fifteen years editor of the Paris (Tenn.) *Post Intelligencer*, postmaster of Paris for four years, died at his home in that city August 9, from disease of the lungs, after an illness of several years, aged 71.

James P. H. Dunn, M.D. University of California, Medical Department, San Francisco, 1888; a member of the American Medical Association and Pacific Association of Railway Sur geons; head of the Oakland Central Hospital; and surgeon to the Southern Pacific Hospital Association at Oakland; died August 13, at the *East Bay Sanitarium from skull fracture*, two hours after being thrown from a horse, aged 48.

Eli Conn, M.D. University of Wooster, Medical Department, Cleveland, 1876; a veteran of the Civil War; probate judge of Butler County, Ohio, for four years;, health officer of Akron; from 1882 to 1884 a member of the house of representatives; and in 1896 elected state senator; died at his home in South Akron, August 7, from cerebral hemorrhage, after an illness of five weeks, aged 70.

John S. Apperson, M.D. University of Virginia, Department of Medicine, Charlottesville, 1867; a member of the Medical Society of Virginia; surgeon in the Confederate service during the Civil War; from 1891 to 1893 assistant physician at the Southwestern State Hospital, Marion; one of the leading citizens of southwestern Virginia; died suddenly at his home in Marion, August 8, aged 64.

Harmon M. Jeffords, M.D. University of Georgia, Medical Department, Augusta, 1900; a member of the American Medical Association, and president of the Worth County Medical Society; local surgeon of the Atlantic Coast Line Railroad; died August 15, at his home in Sylvester, Ga., after a short illness, aged 30.

John Albert Armstrong, M.D. Vanderbilt University, Medical Department, Nashville, 1884; Medical Department University of Nashville, Tenn., 1885; a member of the city council of San Marcos, Texas, for three years; died at his home in that city, August 11, from heart disease, after an illness of two weeks, aged 47.

Henry Arthur Duvall, M.D. Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1880; a member of the Kentucky State Medical Association; a specialist in diseases of the nose, throat and chest; died at his home in Louisville, August 12, after an illness of two weeks, aged 60.

Gilbert E. Corbin, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1855; a physician and dentist of St. Johns, Mich.; a member of the State Board of Examiners in Dentistry from 1888 to 1895; died at his home, August 6, from heart disease, after an illness of several years, aged 77.

Alexander J. Lowber, M.D. Jefferson Medical College, Philadelphia, 1882; a member of the American Medical Association; for several years secretary of the State Board of Health of Delaware; died at his home in Wilmington, August 12, from disease of the liver, after an illness of several weeks, aged 66.

Ira Barrows Cushing, M.D. New York Homeopathic Medical College and Hospital, New York City, 1872; a veteran of the Civil War; assistant surgeon Third Infantry, M. V. M., from 1873 to 1876; died at his home in Brookline, Mass., August 14, eleven days after an abdominal section, aged 61.

Arthur C. Halbert, M.D. Jefferson Medical College, Philadelphia, 1870; a member of the Mississippi State Medical Association; physician of Lowndes County, Miss.; was instantly killed in Columbus by the falling of the weights of the town clock in the court-house, August 15.

Stephen A. Wood, M.D. University of Vermont, College of Medicine, Burlington, 1884; a member of the Massachusetts Medical Society; for many years town physician and a member of the board of health of Bedford, Mass.; died at his home, August 13, aged 56.

John G. Rishel, M.D. Hahnemann Medical College and Hospital of Chicago, 1866; for many years a practitioner of Lewis, Iowa; fell from the roof of his house in Chickasha, Okla., August 11, and died five hours later from his injuries, aged 67.

David Nelson Patterson, M.D. Dartmouth Medical School, Hanover, N. H., 1877; a member of the Massachusetts Medical *Society; died at his home in Lowell*, Mass., April 23, from chronic nephritis, after an illness of two years, aged 53.

William Alexander Lash, M.D. New York University Medical College, New York City, 1868; a veteran of the Civil War; died at his home in Greensboro, N. C., August 2, from cerebral hemorrhage, after an illness of two years, aged 63.

Thomas K. Smith, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1867; for twenty years a practitioner of San Diego, Cal., died suddenly at La Jolla, Cal., August 8, from cerebral hemorrhage, aged 66.

Joel Simpson Blackburn, M.D. Medical College of Evansville, Ind., 1877; Ohio Medical University, Columbus, 1889; died at his home in Fort Worth, Texas, July 28, from injuries received six days before in a fall from his buggy, aged 60.

William Hambitzer, M.D. University of Bonn, Germany, 1848; a member of the State Medical Society of Wisconsin and a pioneer settler of the Wisconsin lead district; died at his home in British Hollow, Wis., August 10, aged 84.

Soltau Frederick Calhoun, M.D. New York University Medical College, New York City, 1895; of Stockton, Cal.; died at the Alameda (Cal.) Sanitarium, where he had gone to undergo operation, August 12, after a short illness.

Joseph Hibble, M.D. Jefferson Medical College, Philadelphia, 1855; a practitioner of Enon, Ohio, for forty-two years; died at his home in that village, August 10, from rheumatism, after an illness of three months, aged 85.

Charles E. Stipe, M.D. Southern Medical College, Atlanta, Ga., 1898; a member of the Medical Association of Georgia; was struck by lightning and instantly killed near his home in Odessadale, Ga., August 8, aged 31.

Samuel K. Snively, M.D. Jefferson Medical College, Philadelphia, 1869; a veteran of the Civil War; died at his home in Williamsport, Pa., August 11, from heart disease, after an illness of two years, aged 67.

William Kenyon Crelin, M.D. Cleveland, about 1845; said to have been the oldest physician of Missouri; died at his home in Chillicothe, August 2, from mucous enteritis, after an illness of ten days, aged 92.

William Woodruff, M.D. Toronto (Ont.) School of Medicine, 1857; said to have been the oldest practitioner of London, Ont.; died suddenly at his home in that city, August 11, from heart disease, aged 78.

Thomas Patrick McDonald, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1891; a member of the Medical Society of the State of California; died recently in San Francisco.

Havilah E. Hastings, M.D. Missouri Medical College, St. Louis, 1880; a member of the Kansas Medical Society; and local surgeon of the Santa Fe System at Olathe, Kan.; died February 13, aged 60.

James Easton, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1873; for fifteen years a practitioner of Wichita, Kan.; died at his home, August 11, from kidney disease, aged 70.

Wesley Peters, M.D. Hahnemann Medical College and Hospital of Chicago, 1885; died at his home in Lancaster, Ohio, August 12, from intestinal disease, after an illness of one week, aged 51.

William Wilson Hamilton, M.D. Rush Medical College, Chicago, 1884; died at his home in East Liverpool, Ohio, August 5, from nephritis, after an illness of more than two years, aged 46.

Schuyler Wade Mahan, a homeopathic practitioner of London, Ont.; died at his home in that city, July 31, from paralysis, after an illness of one month, aged 71.

Tempest J. Sullivan, M.D. St. Louis College of Physicians and Surgeons, 1890; died at his home near New Frankfort, Mo., August 5, after a short illness, aged 40.

Emory Walter Crowe, M.D. University of Maryland School of Medicine, Baltimore, 1908; of Baltimore; was drowned at Ocean City, Md., August 2, aged 25.

Alva B. Curtis, M.D. Dallas (Texas) Medical College, 1904; died in Redlands, Cal., August 8, from tuberculosis, after an illness of nearly two years, aged 40.

William Floyd, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1881; for 45 years a practitioner; died at his home in Peru, Kan., July 25, aged 85.

Henry F. Alpers (Examination, Ill.) of Aviston, Ill.; died recently and was buried from the home of his son in Lincoln, Ill., August 7.

William Higgs Cunningham, M.D. Medico-Chirurgical College of Philadelphia, 1904; died recently at his home in *Shiloh, N. J.*

Thomas A. Glasgo (License, Ind., 1897); an old practitioner of Brazil, Ind.; died at his home in that city, August 8, from paresis.

Anthony White, M.D. Rush Medical College, Chicago, 1890; of Excelsior Springs, Mo.; died April 20, aged 62.

Society Proceedings

COMING MEETINGS

New Mexico Medical Society, Albuquerque, Sept. 2-3.
Washington State Medical Association, Walla Walla, Sept. 2-4.
South Dakota State Medical Assn., Yankton, Sept. 2-4.
Medical Society of the Missouri Valley, Council Bluffs, Sept. 3-4.
Colorado State Medical Society, Denver, Sept. 8-10.
Med. Soc. of the State of Pennsylvania, Cambridge Spgs., Sept. 14-17.
American Assn. of Obstet. and Gynecol., Baltimore, Sept. 22-24.
American Dermatological Association, Annapolis, Sept. 24-26.
Kentucky State Medical Association, Winchester, Sept. 23-25.
Con. of State and Prov. Bds. of N. A., Washington, Sept. 25-26.
Internat'l Congress on Tuberculosis, Washington, Sept. 21 to Oct. 12.
Nevada State Medical Association, Goldfield, Oct. 6-7.
Minnesota State Medical Association, St. Paul, Oct. 7-8.
Idaho State Medical Association, Boise, Oct. 8-9.

MICHIGAN STATE MEDICAL SOCIETY.

Forty-third Annual Meeting, held in Manistee, June 24-25, 1908

(Continued from page 699.)

Treatment of Chronic Heart Diseases by Carbonated Mineral Baths and Exercises

Dr. W. L. Wilson, St. Joseph, described the five types of bath given at Bad Nauheim. He mentioned the methods ordinarily used in administering these baths artificially and objected to them on account of the gas being evolved too rapidly, subsiding too quickly and not being thoroughly mixed with the water. His method was to dilute the St. Joseph mineral water with plain water and add carbonic acid gas from a carbonator. Nine parts of plain water must be used to approximate the *sool Bad* of Nauheim and corresponding amounts for the other varieties. The St. Joseph water contained sulphuretted hydrogen, which, in his opinion, enhanced the effect of the carbonic acid gas. In addition to the baths, graded exercises were given, the diet regulated and the amount of fluid ingested restricted to three pints in the 24 hours. This treatment was indicated in all functional cardiac troubles, myocarditis, fatty heart, angina pectoris, and in all forms of loss of compensation due to valvular disease or dependent on muscular changes.

Distinction Between Hysteria, Neurasthenia, Hypochondria and Simulation

Dr. Carl D. Camp, Ann Arbor, called attention to the liability of confusing these conditions and to the means of differentiating them. In hysteria there were the so-called accidents which were transient phenomena—e. g., paralysis, convulsions, emotional outbursts, etc.—and the stigmata which were permanent manifestations—e. g., concentric contraction of the visual fields, reversal of the color fields, anesthesia of conjunctiva, pharynx or skin (not corresponding to nerve distribution), mental characteristics, etc. In neurasthenia there was always history of a mental or physical strain too great for its victim's organism to endure, the patient was fatigued in body and mind, had fatigue pains (as backache), lack of mental concentration, loss of memory, irritability and increased reflexes. There were no manifestations like the accidents or stigmata of hysteria. In hypochondria the patient believed he was ill when he was not, he attributed to himself symptoms that he had seen, heard or read about, but had no signs of hysteria or neurasthenia. In simulation, the patient had some ulterior purpose and was rarely able to carry out a well-feigned series of consistent manifestations.

Hypertrophic Stenosis of the Pylorus

Dr. W. M. Donald, Detroit, recapitulated the symptoms of this comparatively new disease, or rather of the disease recently described by the caption of "Hypertrophic Stenosis of the Pylorus." He emphasized the fact of its occurrence largely in males (about 80 per cent.), referred to the valve-like arrangement of the pylorus caused by the folds of the mucous membrane during spasm, and showed a specimen in which a pencil could be readily introduced through the pylorus, but in which fluid could not be forced into the duodenum from the stomach, on account of the folds of the mucous membrane in the pylorus. He asserted the comparative rarity of the disease by the statement that in the Great Ormond Street Hospital for Sick Children in London, only 39 cases were reported in ten years, but likewise asserted that many cases were overlooked in private practice through lack of familiarity of the ordinary practitioner with the symptoms of this disease. He reported four cases occurring in one family during the past eleven years, two of them being demonstrated postmortem, and all of the patients except one dying within a week of birth, the third lived for five months and finally died of inanition. He believed the record of four cases in one family to be unique in the history of this disease. Of the four, two patients were males and two females.

Diet and Digestion.

Dr. F. J. Groner, Grand Rapids, emphasized the too prevalent neglect of dietetics by physicians in their employment of therapeutic agencies. The habits of eating among civilized beings were accountable for many acute and chronic disturbances, not only gastrointestinal, but constitutional, diathetic, circulatory, and visceral diseases. Insufficient mastication, over-feeding and under-feeding, irregular and too short meal intervals, improper cooking, the choosing of vicious food articles, the disregard of nutritive values, unwise exertions as related to meals, vicious habits of fluid intake—all these were factors so widespread that they were seldom given any thought. It should be the physician's duty to inquire into habits of diet and try to know and advise correct methods.

The Country Surgeon.

Dr. H. B. Garner, Traverse City, in his chairman's address to the Surgical Section, emphasized the rôle which the country practitioner plays in surgical work. In America certain operations were first performed by country surgeons, as, for instance, Bradshear of Kentucky, who did the first hip-joint amputation, Levert of Louisiana, who first used the metallic ligature, Stephens of St. Croix, who first ligated the internal iliac, White of New York State, who first tied the common iliac, Deverie of Tennessee, the first to remove the lower jaw, Evans of Traverse City, who first successfully operated for spina bifida, MacDowell of Kentucky, whose ovariotomy was the first done in any country. The city specialist is apt to underestimate his rural brethren and to decry their attempts to do surgery, but many emergency operations must be done by the general practitioner, even including laparotomies, and occasionally a man of force and aptitude attained great surgical skill.

Drainage Following Cholecystotomy.

Dr. J. T. Reycraft, Petoskey, asserted that drainage was too often unnecessarily used after cholecystotomy. Many operators invariably drained and the majority drained in most instances, but there were many cases in which the mucous membrane of the gall bladder was healthy, as evidenced by its normal appearance, and in which the bile is non-infectious, even when many concretions were present. In such cases, if the common duct be patent, the author advised closing the gall bladder and the abdominal wound without drainage. Observance of this rule would result in the closure of two-thirds of cholecystotomy wounds, with an accelerated convalescence and a diminution of the postoperative hernias. If an occasional error were made in thus closing wounds, it would be easy to operate a second time and remedy the mistake. He suggested that when drainage is necessary a soft rubber tube is the only means advisable, cigarette drains and gauze are never to be used, according to his experience.

Discussion of this paper elicited a wide divergence of opinion.

Acute Peritonitis.

Dr. W. F. Metcalf, Detroit, elaborated the latest ideas on history, physiology and pathology of the peritoneum and its inflammations, quoting especially from Dudgeon and Sargent's work on the bacteriology of peritoneal infections. These recent ideas had profoundly influenced methods of diagnosis, prognosis and treatment. One could not wait for classic signs, for treatment was then likely to be fruitless. Operation should be done as soon as diagnosis was established, and the diagnosis ought to be plain in twelve hours after the onset It makes no difference whether the infection be local or general—an acute peritonitis should be operated on at once, unless the patient be moribund or undoubtedly improving In the operative procedure he preferred the right rectus incision when possible, closed any perforation that might exist refrained from all irrigation or wiping (except removal of feces or food particles by moist gauze), used all possible expedition and placed drainage in the dependent portions. If the process be localized, he laid a cofferdam of gauze around the focus, to be removed in from six to eight days; if this were not indicated, he drained through stab wounds by means of split rubber tubes containing gauze strips. The patient was placed in the Fowler position and normal saline solution given continuously by rectum. He has seen no benefit in these cases from opsonic therapy; he believed in the use of morphin in after-treatment, when there is restlessness and pain, especially in children; he seldom used a cathartic before the fifth day. If mechanical or paralytic obstruction developed, he performed a secondary laparotomy, releasing the bowel or doing enterostomy.

Appendicostomy.

Dr. J. A. McMillan, Detroit, called attention to the value of appendicostomy in treating severe and obstinate cases of amebic dysentery, mucomembranous colitis, and syphilitic ulceration of the colon, all of which were resistant to ordinary methods of treatment. Other surgical procedures, such as extirpation of the colon, colostomy, and cecostomy, were beneficial, but difficult and dangerous, and accomplished no more than appendicostomy, which had the advantage of being simple, safe, efficient, clean, and could be easily closed when desirable. The method is especially indicated in colonic diseases, but its value decreased in proportion as the disease descended toward the rectum, so that sigmoid and rectal affections were better treated by rectal irrigations. After appendicostomy was performed, a rubber tube could easily be introduced into the cecum and fluids injected as indicated; usually irrigations once a day or once in two days would suffice The technic of the operation and the methods of irrigation were fully described.

Chloroform Anesthesia.

Dr. R. M. Gubbins, Ceresco, claimed that the proper care in the administration of chloroform made it a safe, convenient and pleasant anesthetic He dwelt on the need of giving minimum dosage, the use of strychnin for weak heart muscle, morphin and atropin when indicated, due regard for the patient's comfort, both mental and physical, an accurate knowledge of the condition of all important viscera, and the employment of suitable contrivances for administering the anesthetic. He criticized adversely the ordinary Esmarch inhaler and most of its modifications, also the complicated apparatus for combining chloroform, oxygen, etc., in definite percentages, and offered for consideration a mask of his own design, higher than the Esmarch, with perforations of the gauze covering. He mentioned the parenchymatous degenerations produced occasionally by chloroform and admitted that at present there was no way to obviate their occurrence

Acute Toxemia After Chloroform Anesthesia.

Dr. F. W. Heyslit, Freesoil, said that many practitioners who use anesthetics were apt to think their patients out of all danger from the anesthetic as soon as its primary effect had worn off. But it must be realized that not only do pneumonias occur, but after chloroform especially there occurred a form of acute toxemia, due to parenchymatous degeneration of the liver, kidneys and other organs. The symptoms of this toxemia occurred from 10 to 150 hours after anesthesia and comprise feelings of distress and anxiety, restlessness, delirium or stupor, nausea, vomiting, jaundice, convulsions, coma, scanty urine containing acetone, cyanosis, labored breathing, petechial hemorrhages, rise of temperature, rapid pulse. Mild cases were common, exhibiting only a few of these signs in a slight degree. The condition occurred oftener in females than in males, and the majority of deaths occurred in children under 10; a condition of exhaustion from any cause predisposed to the toxemia A case was reported in detail.

Preliminary Report on the Use of Tubercle Residue in Surgical Tuberculosis.

Dr J. W. Vaughan, Detroit, reported 16 cases of surgical tuberculosis in which Vaughan's tubercle residue had been used usually in conjunction with other methods of treatment. The residue was the product obtained by washing a large amount of dead germ substance with water, salt solution, alcohol and ether, then heated with sodium hydroxid and alcohol, which split the germ substance into a toxic portion, soluble in alcohol, and a non toxic portion (the residue) insoluble in alcohol. The cases included tuberculous peritonitis, tuberculous kidney, psoas abscess, glands of neck, joint infections. He stated that his patients showed an undoubted beneficial effect from the bacterial therapy, that this was probably brought about by the formation of an enzyme in the blood, which reacted chemically with the tubercle bacillus so as to injure or destroy it The total leucocyte count was not changed, but the differential count showed an increase of from 15 to 20 per cent. of polynuclear forms.

Diverticulum of the Esophagus.

Dr H. O Walker, Detroit, spoke of the two classes of esophageal diverticula First, the "traction" variety, produced by a pull from without, usually by inflammation; these were usually small and gave very slight symptoms. Second, the pressure diverticula, produced by intraesophageal pressure, either congenitally or secondary to trauma or stricture. This variety gave serious symptoms, including choking, nausea, regurgitation, and inanition. Sometimes the diverticulum first filled with food and then food would pass by into the stomach, or food could be taken only in certain positions; occasionally the sac could be emptied voluntarily by vomiting, or it might require pressure; there might be pain after eating; in a few cases the decomposition of food in the sac gave rise to fetid breath All these points, together with the bismuth-*x* ray examination made the diagnosis definite. Prognosis was poor, death usually resulting from starvation, aspiration pneumonia, or phlegmon secondary to perforation. The treatment consisted in operative measures. He reported a case thus treated successfully. The mortality of the modern operation was very small.

Nerve Involvement in Fractures of the Extremities.

Dr. Carl S. Oakman, Detroit, said that nerve injury at the time of fractures, or during reduction, retention or formation of callus, was an uncomfortable complication which could be effectively treated if recognized. Often, however, the circumstances of fracture accidents and their treatment led one to overlook nerve involvement and then the problem was increased in difficulty. Injuries to nerves of the upper extremity occurred far oftener than those of the lower, and the musculospiral was affected more often than any other nerve. The nerve was either contused, lacerated or entirely divided, most frequently the second. The symptoms of division of mixed nerves were anesthesia and motor paralysis, followed by atrophy, trophic and inflammatory skin changes, and occasional joint lesions: in laceration the symptoms partook of the above details in proportion to the extent of the injury. In contusion also the same symptoms existed, but usually milder and of limited duration, tending to spontaneous recovery. Pressure of a nerve by growing callus gave rise to paresthesia, hyperesthesia and muscular twitchings, followed by paralytic manifestations. In every case of fracture the physician should test the skin sensations before applying retentive dressings in order properly to treat nerve complications if they exist. Prompt recognition and intelligent measures might save months of inconvenience and possible lawsuits. Electical tests for degenerative muscle changes were helpful. Avoidance of violent manipulation in reducing fractures and dislocations would prevent a few nerve injuries, and careful watching of the position of fragments would sometimes forestall the pinching of nerve trunks.

Bloodless Operation for Internal Hemorrhoids.

Dr. L. J. Hirschmann, Detroit, described his technic as follows: A hypodermic dose of morphin is given twenty minutes before operation, the bowel is washed out with a suds enema and boric acid irrigation; the patient assumes the Sims lateral position. the parts are shaved and cleansed, and then anesthetized locally by hypodermic injection of from 20 to 60 minims of beta eucain lactate solution, previously sterilized by boiling strength from 0.1 to 0.5 per cent. The sphincter is dilated to whatever extent is necessary (usually not much), the hemorrhoids exposed and individually anesthetized; a ligature carrier armed with No. 2 catgut is passed through the mucous membrane at the base of the pile and so directed as to half encircle the pedicle submucously and emerge at the opposite side; the ligature is tied snugly, thus effecting a ligation of the whole blood supply and only one half of the mucous membrane. An analgesic suppository is given and the patient put to bed Pain may persist for twenty-four hours, due to swelling. Inside of four weeks the piles thus ligated shrink and disappear, or the "nub" can be cut away. If there is no indication for haste, the pile can be removed at time of operation, leaving the wound to heal by granulation. He claimed that the procedure is recommended by its simplicity, brevity, safety and lack of hemorrhage

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Early examination of every pregnant woman should be made. Syphilis was a more frequent cause than was now recognized. Premature labor should be brought on as soon as the child's interests were safely conserved. Uterine hemorrhage and inflammation were thus limited.

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Dr. J. H. Carstens, Detroit, said that it was well to have it well fixed in the mind that cancer, at its beginning, was a local disease, that at some time it was microscopic and that at some time in its course it was absolutely local and could be thoroughly removed. A crusade against cancer similar to that against tuberculosis should be begun. Physicians sometimes neglect cases of uterine bleeding; every woman in the cancerous period of life showing the slightest symptoms should be carefully examined. Excessive flow at the time of the menopause meant trouble and was not a normal manifestation of the climacteric. A discharge in a woman formerly free from it was an ill omen, and loss of weight and strength were important symptoms. The necessity of curettage and microscopic examination of the scrapings was dwelt on. Thoroughness of examination and early diagnosis were the necessities for a decrease in the frightful cancer mortality. The author proposed a cancer circular in which were given the signs by which a woman might know that she was in danger.

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Dr. W. P. Manton, Detroit, described the case of a primipara, aged 35, with previous history of pyelitis, who was taken with eclampsia in the eighth month of pregnancy; she had four convulsions and the urine was loaded with albumin. She was anesthetized, the cervix manually dilated, and the fetus extracted by forceps. The child lived only four hours. Both the cervix and perineum were torn, but only the latter was repaired at the time, on account of the patient's poor condition. On the third day after delivery a vesicocervical fistula developed, and within two months an attempt was made to repair it. After twelve days it reopened, but was much smaller. Six weeks later the woman experienced menstrual pain and again a month later. Shortly after this another operation was done. The uterus was found enlarged to the size of a three months' pregnancy, due to atresia of the cervical canal and retained menses. The uterus was evacuated, another plastic operation done to relieve the fistula and prevent repetition of the atresia, and this was followed by complete recovery, and the restoration of normal menstruation.

Toxemias of Pregnancy: Etiology and Pathology.

Dr. W. H. Morley, Detroit, said that the etiology of these toxemias was still unsettled, and that, therefore, many theories existed. The conditions might be due to hepatic insufficiency before or after conception, or to toxins circulating in the blood due to faulty elimination, or to aberrant chorionic and other fetal elements. The severe and mild hyperemesis the other vague symptoms of toxic affections, and the various grades of renal trouble, including eclampsia, were all probably different manifestations of a common causation. The pathologic changes consisted in tissue destruction, mild or severe, according to the degree of toxemia. Liver, kidneys and spleen were the organs most often and markedly attacked: there might be simple degeneration, or atrophy, or necrosis and hyperplasia of connective tissue elements. The thyroid was often hyperplastic.

Toxemias of Pregnancy: Diagnosis and Treatment.

Dr. H. E. Randall, Lapeer, stated that the diagnosis of the toxemias rested on recognition of certain symptoms, such as nausea, vomiting, epigastric pain, headache, edema, together with detection of diminished urea, albuminuria, casts and increased blood pressure. Convulsions might come on suddenly without premonitory symptoms. If the toxemia were accompanied by hepatitis there might be stupor, coma, black vomit, biliuria, and rapid respiration. Acute yellow atrophy of the liver should be called either pernicious jaundice or icterus gravis; its most frequent occurrence was in pregnant women, as a severe phase of toxemia. In treatment of toxemias of gestation the first indications were elimination and lowering of blood pressure; for the former, use cathartics, diaphoretics and diuretics; avoid morphin. To lower blood pressure use nitroglycerin, the nitrites, veratrum, or venesection. Administer chloroform to control convulsions. If severe cases do not respond to these means, terminate labor at once.

Medicolegal

Calling of Physician as Witness Waives Privilege as to Prior Examinations.

The Supreme Court of New York, Appellate Division, Second Department, says that the serious question in the personal injury case of Marquardt vs. Brooklyn Heights Railroad Company was the extent of the plaintiff's injuries. She called as a witness a physician who attended her after the accident and who testified that he treated her for a nervous condition. The defendant's counsel elicited from the witness on cross-examination the fact that he had treated the plaintiff for nervousness before the accident. The evidence was at first objected to as incompetent and inadmissible, and the trial court was about to sustain it on the ground that it was privileged, when the plaintiff's counsel stated that he was not claiming privilege, whereupon the defendant's counsel was allowed to proceed with the cross-examination until finally, after some dialogue between court and counsel, the court stopped the cross-examination in reference to the plaintiff's condition prior to the accident, and struck out all of the testimony of the witness on that subject, on the ground that the witness was precluded from testifying by Section 834 of the New York Code of Civil Procedure. The Appellate Division holds that this was error.

By calling the physician as a witness the court says that the plaintiff waived her privilege. Permitting a witness to be sworn and examined without objection is an express waiver, and a waiver once made can not be recalled.

In this case the plaintiff, the court says, had not only called the witness and examined him in reference to her condition after the accident, but counsel during the cross-examination had expressly stated that he did not claim the privilege as to examinations made by the witness prior to the accident. The court thinks that, by calling the physician and examining him in reference to her condition after the accident, the plaintiff waived her privilege as to prior examinations, and it was permissible for the defendant to show by cross-examination that the condition testified to by the witness existed prior to the accident. If the plaintiff desired the shield of the statute, she should not have called the physician as a witness. When she did so, she opened the door to any inquiry relevant to the fact in issue concerning which the witness had testified.

Corporations Not Liable for Medical Services Rendered with Approval of President.

The Supreme Court of Indiana says that it was averred in the case of Cushman vs. Cloverland Coal and Mining Company that an employé of the defendant company, while at work for it, was personally injured, his wounds being of so serious a nature as to create an emergency for the immediate attention of a physician and surgeon in order to save his life, by reason whereof the plaintiff was called and employed to attend and treat him, by the defendant, by and through its mine superintendent, etc. But that was not all. The complaint showed further that, on the employment of the plaintiff by the mine superintendent, the latter immediately reported the fact to the defendant's president and general manager, who, as such officer, with full knowledge of the employment of the plaintiff, ratified and confirmed the same by expressing his approval, and by requesting the plaintiff to supply the injured employé with necessaries. So that the question of the sufficiency of the plaintiff's complaint, or right of recovery, really rested on the ratification by the defendant, acting through its president and general manager, rather than on the power of the mine superintendent to make the employment.

Ratification can only be made by one who has power to make the contract in the first instance. If the president and general manager had authority, either express or implied, from the defendant's board of directors to employ the plaintiff to render the services sued for on behalf of the corporation, then he could, no doubt, give validity by ratification to the superintendent's contract.

The naked act of investing the individual with the office of president gives him very little power to act for the corporation. He has no power to bind it in material matters, except as he may be authorized by law or by the board of directors.

Another general rule, apparently of universal acceptance, is that officers of corporations organized for and engaged in commercial pursuits, without special authority, can not, as a legal right, charge the corporation with the employment of physicians and surgeons to attend on sick or injured employés. The rule is even applicable to railroad companies.

No court, this court thinks, has gone so far as to hold that even the general manager of a railroad may, on behalf of the company, engage generally in providing medical aid to sick and injured employés and passengers, especially where it is not shown that the sickness or injury was the result of the company's negligence.

A modified exception to the rule applicable to railroad companies is generally recognized, founded on the exceptional characteristics and hazards of their operation. Employés of railroad companies, particularly trainmen, are called on to perform their duties along the line of the railroad, extending many miles. When on duty they are constantly away from home, often remote, among strangers, and beyond the quick reach of family and friends. In such cases, when the employé becomes seriously ill, or suffers a severe injury, and he has available neither family, friends nor credit, nor ability to provide for himself the care and medical assistance his condition imperatively demands, the dictates of humanity cast on the employer, as the one nearest in obligation, the duty to provide, during the continuance of the emergency, whatever is immediately and urgently required for the preservation of life and limb. It is only when there is no relative or friend present willing to help the sick or injured employé at a time of urgent necessity that the duty and authority rests on the employer, acting by its highest representative present to render assistance. Some one must serve the helpless man, and the law devolves the duty on the master rather than on a tical tests for degenerative muscle changes were helpful. Avoidance of violent manipulation in reducing fractures and dislocations would prevent a few nerve injuries, and careful watching of the position of fragments would sometimes forestall the pinching of nerve trunks.

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But this exception relating to railroads had no bearing on the question before the court. The defendant was a coal mining company, a strictly private corporation. Its business was stationary. Its employés performed their duties in one general working place near their homes, family, friends and acquaintances, and had all the facilities for hastily summoning medical and other aid in time of pressing emergency as might be possessed by the corporation.

There is no greater or different reason for holding a private mining corporation responsible for supplying medical aid for its employés than appertains to all kinds of manufacturing bodies, and the court perceives no reason why either class of corporations under ordinary circumstances should be required to furnish their workmen with medical service any more than they should be required to furnish them with their dinner. The policy of the law is to protect the employé, equally with the employer, in the fullest freedom of choice in supplying his personal wants of every kind, whenever he is as capable and well prepared as his employer to act for himself.

The court does not, however, hold that a case can not arise with a mining or manufacturing company, or even with an individual, wherein the facts may be so unusual and extreme as to impose on the employer a duty analogous to that imposed on railroad companies. But no such case appeared under the facts alleged in the complaint. It was alleged in the complaint that the defendant was a corporation organized for and engaged in the business of mining coal, that the plaintiff was personally injured while at work for the defendant as one of its employés. There was no averment that either the mine superintendent, or the president and general manager, had received authority from the corporation to contract for, or to ratify, the employment sued on, either expressly or by implication. The court was not informed even of the nature of the employment, whether as engineer, blacksmith, miner or other particular service. Neither was it informed of the nature or extent of his injury, nor the facts that created the emergency that imposed on the coal company the duty of employing the plaintiff. It was not averred that the injured employé was unable to help himself, or that he had no money, or credit, or family, or friends present to give him assistance, nor was it shown by the complaint that there existed any other reason why he was not as able and competent to speedily summon a physician as the company. The averment that the injured party's wounds were so severe as to create an emergency for the immediate attention of a physician and surgeon in order to save life was but pleading the baldest conclusion. Facts, and not conclusions, must be stated. The essential facts that should appear in support of a justifiable emergency were absent, and, as in all other cases, the court must, in testing the sufficiency of the pleading, assume such absent facts to be adverse to the pleader, under the general presumption that a party will set forth all the facts favorable to his case.

There was no error in sustaining a demurrer to the complaint in this case.

Procedure Before State Board of Health and Revocation of License for Criminal Abortion

The Supreme Court of Nebraska holds, in Munk vs. Frink, that a complaint filed before the State Board of Health for the purpose of procuring an order revoking the license of a physician is sufficient if it informs the accused, not only of the nature of the wrong laid to his charge, but of the particular instance of its alleged perpetration. And in a trial under such a complaint it is not necessary that the proceeding should be conducted with that degree of exactness which is required on a trial for a criminal offense in an ordinary tribunal of justice.

Proceedings by the State Board of Health to revoke a physician's license for cause are summary in their nature and are triable before the board without the intervention of a jury. A trial and conviction in a court of competent jurisdiction is not a condition precedent to a proceeding by the State Board of Health against a physician to revoke his license for any of the causes provided by statute.

The power conferred on the State Board of Health to revoke a physician's license for cause is an administrative and not a judicial function, and the limit of judicial interference in such cases is to protect the accused in his right to a hearing on specific charges after reasonable notice of the time and place of hearing has been given and a full opportunity afforded him to present his defense to such charges and against a conviction, unless on competent evidence. And in such a case, when the State Board of Health has so proceeded and taken testimony, and has given the respondent full opportunity to appear in person or by counsel to cross-examine the witnesses against him, and to introduce testimony in his own behalf, and has passed on the sufficiency of the evidence so taken, the findings of the board as to the sufficiency of the evidence to sustain the charges will be upheld, unless it appears that there is no evidence to sustain such findings.

In a hearing by the State Board of Health of charges against a physician for procuring or aiding or abetting in procuring a criminal abortion it is not necessary to either allege or prove that the woman had become quick. It is not the murder of a living child which constitutes the offense, but the destruction of gestation, where such destruction is not necessary in order to preserve the life of the woman. The moment the womb is instinct with embryo life and gestation has begun the crime may be perpetrated.

The Supreme Court Commissioners say in this case that the section of the statute under which the proceedings in this case were had defines "unprofessional and dishonorable conduct," and includes "the procuring or aiding or abetting in procuring a criminal abortion" in that definition. This definition was assailed as 'a profound legal bizarrerie," counsel saying that the author of that definition 'should be immortalized as an apostle of the incongruous." But the Commissioners are unable to concur in this severe criticism of the author of the section of the statute under consideration or of the definition referred to. If "the procuring or aiding or abetting in procuring a criminal abortion" is not "unprofessional or dishonorable conduct" in one holding a certificate entitling him to practice medicine, then the Commissioners are unable to conceive of any conduct of which such person might be guilty which could be called unprofessional or dishonorable.

With regard to the contention that a sufficient complaint of unprofessional or dishonorable conduct within the meaning of the statute must, in apt terms, charge the criminal destruction by the accused, either as principal or accessory, of a vitalized human fetus, the Commissioners say that authorities are not wanting to sustain this contention, but the doctrine of the Supreme Court of Pennsylvania, in Mills vs. Commonwealth, 13 Pa. 632, is preferred. If the theory contended for should be sustained it would be practically impossible to convict an abortionist for any abortion or attempted abortion, during the first five months of pregnancy, for if gestation had not proceeded to the period of quickening there would be no way of disputing the testimony of the abortionist that what he removed from the woman was, in fact, a dead fetus. Even the woman herself could not dispute this testimony prior to pulsation following the quickening period. It would be giving unlimited license to the abortionist to ply his nefarious calling provided he confined his criminal operations to the early months of gestation. The Commissioners prefer to be in line with the Supreme Court of Pennsylvania, and say, although it has been so held in Massachusetts and some other states, it is not the law "in Nebraska," and never ought to have been the law anywhere.

No error is found in this case in the revocation of the appellant Munk's license as a physician.

In the companion case of Walker vs. McMahan, the Commissioners say that it was true that the appellant Walker acted as assistant only to Dr. Munk in performing the operations complained of, but the evidence showed such a concert of action between these two doctors in these and other cases of a similar nature, and such a ready and unquestioning participation by the appellant Walker with Dr. Munk in the performance of the two operations involved that there was no escape from the conclusion that if one were guilty both were

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below

Boston Medical and Surgical Journal

August 13

1 *Prophylaxis in Surgery R J Pye-Smith Sheffield
2 *Immediate Treatment of Serious Ocular Conditions Frequently First Seen by the General Practitioner F E Cheney Boston
3 Excision of the Os Innominatum Arthrodesis of the Sacro iliac Synchondrosis C F Painter, Boston
4 General Therapeutics of Gastric Affections M V Tyrode Boston
5 *Examination of One Hundred Eye Cases in the Dedham Public Schools R W Place, Boston

1 See Foreign Abstract No 3, p 794

2 **Ocular Conditions and the General Practitioner**—Cheney discusses certain grave diseases of the eye that are usually first seen by the family practitioner, and for which he must be prepared temporarily to assume the responsibility for treatment In acute glaucoma the immediate treatment demanded is a miotic to contract the pupil and to relieve symptoms temporarily, pending an iridectomy He recommends beginning with two or three drops of a 2 per cent, pilocarpin nitrate solution, instilled into the eye every half hour If that fails, a 1 per cent solution of eserin sulphate may be used with equal frequency Morphin may be advisable for the pain and an early saline cathartic is beneficial He next discusses iritis, and incidentally mentions, as a point hitherto unnoticed in the literature, that "supraorbital pain is not infrequently absent, or at least very moderate until atropin is used, when it may become severe, and so continue until the inflammation begins to subside" It is necessary to caution the patient of this, and not to discontinue the remedy on this account, because the one objective of treatment is as wide dilatation of the pupil as possible Leeches to the temple are often of great use, especially when intense congestion rather than adhesions is the cause of the failure to dilate Ophthalmia neonatorum is next discussed, and finally perforating wounds of the eyeball As emergency suggestions in the last named cases, Cheney orders thorough cleaning and irrigation of the conjunctival sac with boric acid or other mild solution to lessen chances of infection, dilatation of the pupil with 1 per cent atropin three or four times at four minute intervals to prevent adhesions and check likelihood of iritis, some simple ointment applied to the eye He recommends White's ointment

℞	gm		
Hydrargyri bichloridi	005		gr 1/12
Sodii chloridi	03	or	gr ½
Petrolati .	16		ʒiv

Epsom salts or other active cathartic and a leech to the temple are also recommended

5 **Eye Conditions in Public Schools**—Place reports the results of an examination of the eyes of school children at Dedham, undertaken under the authority of the school committee because of the large number of cases of inability or indifference on the part of parents to attend to the matter The figures are as follows Number examined, 113, wearing properly fitted glasses, 21, wearing improper glasses, 16, recommended to wear glasses, 47, not needing glasses, 29 Three far sighted children had been fitted with near sighted glasses by opticians Place particularly cautions that young children with two, three and even four diopters of hypermetropia can sometimes read the usual amount at a distance, and these must be watched for inability to read their books for any length of time without having the vision blur or the eyes ache" These children are liable to nervous symptoms

Medical Record, New York

August 15

6 *Surgical Treatment of Empyema P F O'Connor Waterbury, Conn
7 Treatment of Negligent Speech by the General Practitioner E W Scripture New York
8 *The Hospital and the Professional Anesthetist A T Bristow Brooklyn N Y
9 *Improvement of General Anesthesia on Basis of the Principle of Adapting the Boiling Point of the Anesthetic to the Temperature of the Body (Schleich)—Ten Years Experience at the German Hospital W Meyer New York
10 Anesthesia at St Luke's Hospital R Abbe, New York
11 Administration of Anesthetics at Mt Sinai Hospital H Lilienthal New York
12 Anesthetics at the Hospital for Ruptured and Crippled V P Gibney New York
13 *Amputation in Diabetic Gangrene E H Eising New York
14 Anesthesia by Chloroform and Ether E Pendleton Richmond Va

6 **Empyema**—O'Connor discusses the operative treatment of empyema and concludes that simple incision lacks the fundamental principles of surgery and most advanced modern surgeons do not consider it a recognized method of procedure for the surgical treatment of empyema The established plan of procedure, which has withstood the test of time, is that laid down by Hippocrates with the exception that Hippocrates trephined the rib to avoid injury of the intercostal vessels and nerves, while we, with a more perfect knowledge of anatomy, prefer to resect a portion of one or more ribs, thus enabling the surgeon to introduce one or more fingers, or the whole hand, into the pleural cavity, and by intrapleural manipulation to break up all adhesions, remove the large masses of coagulated lymph and thereby accomplish a more thorough surgical operation

8 **The Professional Anesthetist**—Bristow discusses the dangers of the modern method of anesthesia in hospitals and submits a series of figures drawn from fifteen replies from members of the Brooklyn Society of Anesthetists to the following questions 1 How long does it take you to induce an anesthesia? 2 How much of the anesthetic do you use in the induction? 3 How much of the anesthetic do you use in an hour? The figures include about 10 000 cases which Bristow contrasts with the figures from six hospitals covering about 900 cases The comparison leads him to the conclusion that in hospitals ether is wasted, largely by the open method, or that the patient gets far more ether than is required or both He concludes that there is really just as much reason for appointing a visiting anesthetist to a hospital as for making any other professional appointment on the staff Two things have to be provided for the instruction of the internes and the payment of the anesthetist The latter may be effected either by the hospital paying him a salary, which he may supplement by private work the hospital recouping itself by a regular charge to private patients, or the anesthetist may receive his payment directly from all private patients operated on in the hospital

9 **Anesthesia.**—Meyer discusses Schleich's method of improving general anesthesia on a physical basis by adapting the boiling point of the narcotic to the temperature of the body He then considers the use of a combination of chloroform, ether, and ethyl chlorid, which he has used in hospital and private work for ten years and which has also been extensively used (preceded by a hypodermic of morphin) at the German Hospital He considers that the improvement of general anesthesia, brought about on a principle of adapting the boiling point of the anesthetic to the temperature of the body, has been sufficiently demonstrated to merit the full and careful consideration of the profession

13 **Diabetic Gangrene**—Eising discusses the role of the following factors 1, Glycosuria, 2, the acetone bodies, 3, ammonia excretion, 4, kidney complications, 5, arteriosclerosis, 6, blood pressure, and finally gives a summary of these factors in relation to gangrene He concludes that armed with these facts determinable in any given case of diabetes we may apply them in the following manner First, prognostically, before the occurrence of gangrene even in the presence of a high glycosuria a marked acidosis (which means diacetic acid alone or diacetic acid and beta oxybutyric acid), and advanced age, in the absence of arterio-sclerosis and high blood pressure, we may look on the patient as being not of the type to develop gangrene And again, from the prognostic standpoint, a patient not past forty years with a low percentage of sugar, with no acidosis but with an interstitial nephritis and a marked arteriosclerosis, we may look on as belonging to the type of those who may acquire gangrene

New York Medical Journal.

August 15.

15 *Local and Surgical Treatment of Chronic Diarrhea S. G. Gant New York
16 *Use of the Bronchoscope, Esophagoscope and Gastroscope T. H Halsted, Syracuse, N. Y
17 *Extension, Without Use of Weights, for Fractures C. M Paul, Cincinnati
18 Syphilis G Merzbach, Germany.
19 Preliminary Report on the Vaccine Treatment of Atrophic Rhinitis R H Skillern and E Burrill Holmes, Philadelphia
20 Headache and Its Cure J A Donavan, Butte, Mont
21 *Pneumonia One Method of Treatment E P Tompkins, Roanoke, Va

15. **Chronic Diarrhea.**—Gant believes that in a vast majority of cases chronic diarrhea is due to ulcerative lesions in the colon. Medicaments, though useful in acute diarrhea, are ineffective in the form under consideration. The local treatment of colitis may be non operative or surgical; the former includes diet control, rest and colonic irrigation Its success depends mainly on the thoroughness with which the bowel is cleansed The irrigation treatment is usually effective in all varieties of colitis, but it naturally takes a longer time to overcome a tuberculous form than it does other types of ulcerated colitis When non operative measures fail after a few weeks' or month's trial, one of the following operations may be resorted to: Resection of the colon, colostomy, appendicostomy, cecostomy with irrigation of the small intestine (Gant's operation), and intestinal exclusion He discusses each of these in detail and prefers cecostomy and appendicostomy as being effective, not dangerous, capable of easy performance, and as leaving few if any undesirable sequelæ. Gant has no more hesitancy in advising these operations for the relief of chronic diarrhea than in recommending appendicectomy for appendicitis. Finally, he describes in detail a method of his own devising, not hitherto published, which he considers an effective way of irrigating both the small and larger intestine through the same opening in the cecum This procedure is also useful in conditions other than diarrhea, namely, in the treatment of ordinary and pernicious anemia, autointoxication, ptomain poisoning, diarrhea of children, intestinal feeding following operations on the mouth, in stricture of the esophagus, gastric ulcer, cancer, etc.

16. **Bronchoscope, Esophagoscope, and Gastroscope.**—Halsted reports eighteen operations or examinations performed on fourteen patients; fourteen times under general anesthesia (ether in all but one), three under cocain, one without any anesthetic, The patients varied in age from a new-borne babe of two hours to a woman of seventy. In four cases the operations were for the removal of foreign bodies. In the remaining cases the operations and examinations were for growths in the pharynx and larynx for strictures, etc. Halsted concludes that direct visual examination of the larynx, the trachea and the bronchus, down almost to the last subdivision of the bronchiole, is a practical thing and of inestimable value, not alone for the removal of foreign bodies in the lower air passages, but for the diagnosis and local treatment, both by topical applications and surgical interference, of various lesions that affect the larynx, trachea, bronchus and the lung, such as laryngeal tumors, tracheal and bronchial ulcers, tuberculous or other lesions, and lung abscesses, discovering the cause and location of pressure on the trachea and bronchus. By means of esophagoscopy the accurate diagnosis and treatment of many hitherto inaccessible diseases of the gullet becomes possible. The causes of painful and difficult deglutition, the etiology and diagnosis and localization of esophageal obstructions and stricture will depend not so much on the findings of the bougie as on the observations of the eye, aided by the probe. Through the gastroscope Chevalier Jackson has demonstrated the possibility of making a systematic and complete examination of from two thirds to three fourths of the stomach wall; that in many cases the pylorus can be seen and probed; that gastric ulcers can be treated locally; that early diagnosis of carcinoma can be made; that sections of tumors can be removed for microscopic examination—in a word, that the stomach, like the larynx, is subject to direct and local examination and treatment.

17. **Fracture Extension Without Weights.**—Paul describes a method of using an ordinary Bradford frame covered with a bag of strong unbleached muslin, which is so cut as to form a series of hammocks. This enables the application of a plaster dressing to be made with circular turns without handling any part of the patient. The process of applying the plaster bandages is described. The article is illustrated.

21. **Pneumonia.**—Tompkins' method he asserts to be of value only in the stage of engorgement. He considers it the rational thing to do, to endeavor to decongest the capillary vessels of the alveoli. This was the object of the old-time bleeding, but the skin is capable of containing one-fourth of the entire volume of blood. The patient, therefore, in this stage is surrounded by bricks made red hot in the fire and then put into boiling water and wrapped in a cloth. A flannel saturated in turpentine and covered by a newspaper is applied to the seat of pain. Half a grain of calomel and sodium hydroxid are given four times at two-hour intervals; and alternating with this, aconite, two minims, tartar emetic, one-fortieth grain, ipecac one-eighth grain, morphin sulphate, one twentieth grain. He reports a case in which a rapid change took place within seventy-two hours of the time of the onset. He has no quarrel with the open-air treatment, not having had occasion to use it in pneumonia, owing to success with the treatment detailed above.

The Lancet-Clinic, Cincinnati.

August 8.

22 *Primary Melanotic Sarcoma of the Rectum and Anus. L J. Krouse, Cincinnati
23 Injuries at the Elbow. J C. Larkin, Hillsboro, Ohio.
24 *Obscure Fractures Discovered by Roentgen Examination. S. Lange, Cincinnati
25 *Cases of Reinfection with Syphilis. A. U. Williams, Hot Springs, Ark

August 15.

26 The Doctor in Court. F W Langdon, Cincinnati.
27 Typhoid Fever. T. A. Dickey, Middletown, Ohio.
28 Myalgia Lumbalis. S Lemp, Indianapolis.

22. **Primary Melanotic Sarcoma of Rectum.**—Krouse summarizes the literature of the subject and reports two cases of his own, adding a list of the cases that have been reported, with sex, age, location, duration, method of treatment, microscopic structure and results.

24. **Strain Fractures of Knee.**—Lange describes the anatomy of the knee joint, in detail as regards the ligaments, and then proceeds to consider the fracture effects of three classes of ligamentous strain, as follows: (a) Strain in the direction of hyperextension against the crucials, the posterior and the lateral ligaments; strain exerted laterally against the internal or external lateral ligaments, the knee being in extended position, which puts these ligaments in the stretch; (c) strain in a rotary direction, either in the direction of outward rotation, which is normally limited by the lateral ligaments, or in the direction of inward rotation, which is normally limited by the anterior crucial ligament. The transverse fracture of the patella is not included, as being too well known. He gives case reports with diagrams from skiagraphs of 1, Avulsion of external tuberosity of tibia; 2, avulsion of fragment from internal tuberosity of head of tibia with tearing off of small scale from internal tuberosity of femur; 3 and 4, crucial ligament fractures; and 5, a case of epiphyseal separation at lower end of femur.

25. Abstracted in The Journal, Nov. 16, 1907, p. 1707. The article was also published in the *Medical Fortnightly*, Oct. 10, 1907.

Annals of Surgery, Philadelphia.

July

29 *Aneurismorrhaphy [illegible] al Aneurism by the Reconstructive [illegible]ansas City, Mo.
30 *Aneurismorrhaphy [illegible] with the Modern Method of Trea[illegible], New York.
31 *Aneurismorrhaphy. Case of [illegible] Aneurism Presenting Unusual Difficulties in Application of the Matas Operation. J. A Blake, New York
32 *Serous Coat of Blood Vessels Compared with the Peritoneum. R. T Morris, New York.
33 Ligation of the Left Iliac Artery. W J Gillette, Toledo, Ohio
34 *Question of Operation for Non-penetrating Intracranial Trauma J. A Hartwell, New York
35 *Splenectomy. Report of Six Cases, with a Statistical Summary of All Reported Operations up to 1908 G B. Johnston, Richmond, Va
36 *Subcutaneous Rupture of the Spleen G. G Ross, Philadelphia.
37 Gangrene of the Gall Bladder. A. S Lobingier, Los Angeles, Cal.

38 Treatment of Appendix Stump After Appendicectomy. M. Willis, Richmond, Va.
39 *Excision of Carcinoma of the Rectum by the Combined Method. J. A. Blake, New York.
40 *Diagnosis and Prognosis of Tuberculosis and Septic Conditions of the Kidney. G. E. Armstrong, Montreal, Can.
41 *Transperitoneal Removal of Tumors of the Bladder. C. H Mayo.
42 Ainhum. E. A. Babler, St. Louis.
43 Arrest of Growth at the Lower End of the Radius After Separation of Its Epiphysis. A. Waechter, New York.
44 Strain-Fractures of the Knee. S. Lange, Cincinnati.

29 to 32. Abstracted in THE JOURNAL, March 28, 1908, p. 1067.

34. **Operation for Non-penetrating Intracranial Trauma.**—Hartwell considers this question from various viewpoints, therapeutic, diagnostic and prognostic, and reports illustrated cases, and formulates the following conclusions: First: Only in rare cases, namely, those of isolated injury affecting the sensorimotor area, can a positive focal diagnosis be made. Second: All grades of brain injury may be found in different parts of the same brain. Third: A general concussion may be followed by secondary changes in the circulation, which, if not relieved, produce pressure and death. Fourth: A pure decompressing operation is indicated in two conditions: (a) For the relief of pressure due to inaccessible hemorrhage, and (b) to relieve the pressure arising from traumatic edema of the brain. Fifth: Operation done without a very definite object in view, which object is based on careful diagnosis, is apt to be more harmful than hopeful. Sixth: The whole subject is fraught with manifold difficulties, and the brain surgeon should strive to become a practical neurologist in organic lesions.

35. **Splenectomy.**—Johnston reports six cases and summarizes all the reported operations up to 1908 as follows: Seven hundred and eight operations of splenectomy, with 514 recoveries and 194 deaths, a mortality of 27.4 per cent. In the period from 1900 to 1908 there are records of 355 splenectomies, with 289 recoveries and 66 deaths, a mortality of 18.5 per cent. If the instances of removal of the spleen for traumatic affections of that organ be excluded, there remain 242 splenectomies, with 210 recoveries and 32 deaths, a mortality of 13.2 per cent. The well-recognized contraindication to operation in leukemia may furthermore serve to exclude the seven cases in this series, which leaves a total of 235 splenectomies for diseases of the spleen with 208 recoveries and 27 deaths, a mortality of 11.5 per cent.

36. **Rupture of Spleen.**—Ross reports two cases and summarizes the reported literature as follows: Unoperated: Of 220 cases, 17 patients recovered—mortality, 92.3 per cent. Operative results: Splenectomy, 67 cases, 38 patients recovered, 29 died—mortality, 56.7 per cent.; splenorrhaphy, 2 cases, 1 patient recovered, 1 died—mortality, 50 per cent.; tamponade, 6 cases, 5 patients recovered, 1 died—mortality, 83.3 per cent. In the splenectomies 13 patients had complicating injuries, of which 9 died. In two who recovered, the complications were very slight.

39. **Carcinoma of Rectum.**—Blake summarizes his present opinions as follows: No single operative procedure for carcinoma of the rectum should be always carried out to the exclusion of others. The decision between the perineal and combined methods depends chiefly on the feasibility of preserving the efficiency of the sphincter and muscle, provided the growth is removable by the low route. When the combined method is used, an immediate abdominal anus should be formed unless the continuity of the natural passage can be restored with exceptional facility. Institution of a colostomy at a previous operation is an embarrassment rather than an aid.

40. Abstracted in THE JOURNAL, May 30, 1908, p. 1826.

41. Abstracted in THE JOURNAL, Jan. 11, 1908, p. 149.

Southern Medical Journal, Nashville, Tenn.

July.

45 Clinical Notes on Apoplexy. E. G. Wood, Nashville.
46 *Diagnosis of Painful Feet. E. L. Scott, Birmingham, Ala.
47 Recent Work on Stomach Digestion. W. H. Witt, Nashville.
48 Goiters of the Young. C. H. Mayo, Rochester, Minn.
49 Remote Symptoms and Effects of Cholecystitis. A. M. Cartledge, Louisville, Ky.
50 What We Should Know About Malaria. W. Krauss, Memphis, Tenn.
51 Use of Cocain in Surgery. J. S. Horsley, Richmond, Va.
52 Indications for the Mastoid Operation. F. P. Calhoun, Atlanta, Ga.
53 *Treatment and Prevention of Tuberculosis by Tuberculin Immunization. W. Litterer, Nashville.

46. **Painful Feet.**—Scott discusses the various conditions to which persistently painful feet may be due, and summarizes his remarks as follows: First: Acute painful flatfoot is found in persons who subject their feet to abnormal strains. Weak feet, speaking generally, are found in persons who do not accommodate the foot usages and in those whose general bodily condition is below the normal. Weak feet, if untreated, may result in true flatfoot, or chronic strains and displacements in the structure of the feet. Diagnosis is usually not difficult, and is made by exclusion unless the evidence of perverted function be plain. Second: Morton's toe, or anterior metatarsalgia, is most frequently seen in women. The cramping pain in the region of the metatarsophalangeal joint of the third or fourth toe gives the diagnosis. The pain from the strain resultant of relaxations and that due to malpositions and exostoses, is not experienced except when the foot is in activity, while in the first-mentioned condition the pain may appear even during rest. Third: The diagnosis of gout must always be one more of suspicion than of proof; in the average case the condition must be distinguished from the other types of arthritis. The diet and habits of patients bring on attacks, and so this is the leading point in diagnosis. Fourth: Gonorrheal arthritis affecting the foot is in some cases difficult of diagnosis on account of denial of infection. The formation of the exostoses on the os calcis and the other tarsal bones makes it clear. As would be inferred, males are most frequently subject to this condition.

53. **Treatment of Tuberculosis.**—Litterer discusses tuberculin therapy, and concludes that experiments on animals demonstrate the possibility of creating immunity to tuberculosis by the use of tuberculins. He is of the opinion that the time is not far distant when individuals showing a tuberculous tendency will submit themselves to the repeated injections of some form of tuberculin as a means of prophylaxis against this disease. The clinical method in the administration of tuberculin is far preferable to the one advocated by Wright in which the estimation of the opsonic index is essential. Tuberculin therapy is proving an essential aid in the treatment of tuberculosis, especially as an adjuvant to the hygienic-dietetic open-air treatment.

Chicago Medical Recorder, Chicago.

July 15.

54 Treatment of Hyperesthetic Rhinitis (Hay Fever) by Injections of Alcohol. O. Stein, Chicago.
55 A Few Operations in the Eye Department of St. Luke's Hospital and Northwestern Medical School. C. A. Wood, Chicago.
56 *Stab Wound of Fetus *in Utero*. D. A. K. Steele, Chicago.
57 *Action of Individual Drugs Obscured by Mixtures. H. B. Hemenway, Evanston, Ill.
58 *Diagnosis of Cutaneous Syphilis. F. E. Simpson, Chicago.
59 Endometritis. C. J. Drueck, Chicago.
60 Medical Texts for Midnight Sermons. Rev. E. Bell, Chicago.
61 *Treatment of the Puerperium.* H. M. Stowe, Chicago.
62 The von Pirquet Tuberculin Reaction in One Hundred and Fifty-four Children in an Orphanage. May Michael, Chicago.

56. **Stab Wound of Fetus in Utero.**—Steele reports a remarkable case, the extraordinary feature of which lies in the fact that a stab wound through the abdominal walls of the mother, penetrating the gravid uterus, entering the abdomen of the fetus *in utero*, completely severing the jejunum and permitting the escape of the large and small intestines through the wound of the abdominal wall of the fetus—should not in any way have interfered with the growth and development of the fetus *in utero*, or seriously affected the recovery of the mother. Another interesting fact is the complete occlusion of the two divided ends of the intestine of the fetus and the presence of nearly three ounces of glairy, sanguinoloid fluid in the stomach of the fetus at the time of operation—ten hours after birth.

57. **Mixtures and Drug Action.**—Hemenway condemns the dispensary practice of ready-made mixtures, as causing the student to lose sight of the finer and more exact distinctions

in prescribing and leading him to a slipshod system of therapeutics, which he follows out in practice by using the ready made mixtures of large manufacturing concerns In using these mixtures physicians become accustomed only to the general results and lose sight of the accurate indications for the individual drugs These disadvantages are intensified in the case of proprietary mixtures, the formulæ of which are liable to change at the will of the proprietors and in any event are rarely complete He instances various kinds of dangers that may result from the use of unmodified ready made formulæ

58 **Cutaneous Syphilis**—Simpson discusses the three points in regard to the diagnosis of late tertiary eruptions 1 How are we helped by the personal history of patients? 2 How are we helped by corroborative signs of syphilis? 3 How do we tell a tertiary syphilid simply by inspection? As regards the history, there are three sources of error 1 Early syphilis has been mild or benign has caused few symptoms and these have been unnoticed or forgotten 2 Early syphilis has given symptoms that have been misinterpreted 3 Symptoms are present in the history that lead one to suppose wrongly that syphilis is present Simpson discusses each of these heads with instances and adds the tendency of such patients to prevaricate As to the second question, the usual associated symptoms that help us in secondary syphilis are absent in tertiary eruptions One may however search for, first, gummata of other organs especially of the bones or testes, which are easily examined, second, scars in the skin or mouth The determination by inspection of a tertiary eruption is aided by 1 location, and usually asymmetry, 2 destruction of skin, 3, the nature of the individual lesion, usually gummatous, 4 the grouping of the lesions and the border of the patch tendency to serpiginous arrangement and 5, rate of progress When other things fail, we can fall back on the therapeutic test mercury and potassium iodid

Journal of the Michigan State Medical Society, Detroit

July

63 Diagnosis of Extrauterine Pregnancy C N Smith, Toledo, Ohio
64 Theory of Therapeutic Injections of Fresh Normal Serum in Acute Infections C M Stafford Detroit
65 *New Apparatus for the Treatment of Fracture of the Patella A I Lawbaugh Calumet Mich
66 Sudden Death in an Infant Having an Enlarged Thymus Gland with Three Lobes H M Rich Detroit
67 Cases of Otoantritis Subperiosteal Abscess in Infants Pseudocholesteatoma Exostosis and Artificial Drum Membrane in Adults E Amberg Detroit
69 *New Dietic and Injection Method of Treating Typhoid with Report of Cases Successfully Treated in the Last Ten Years F J W Maguire Detroit
70 Biliary Surgery H C Wyman, Detroit

65 **Fracture of Patella.**—Lawbaugh describes a new method of treating fractured patella as follows As the separation of the patellar fragments is chiefly due to the contraction of the quadriceps extensor muscle it becomes necessary to have this relaxed so as to bring the fragments properly into apposition To get a fixed point from which to make this traction adhesive strips 1½ inches wide are used The first strip passes from the inner and upper part of the thigh across the anterior surface to the outer side of knee joint leaving an end for the application of a traction cord, the same is done on the outer side of thigh across to inner surface of knee joint A sufficient number of these strips are used to cover the entire muscle A traction cord is fastened to each aggregation of the ends of these strips on the inner and outer sides of the knee joint These cords pass downward at an oblique angle and are fastened to the lower end of the splint The whole is then swung by the suspension ropes and the amount of traction adjusted by the angle of suspension from the ceiling of the room A firm pad just above the upper edge of the upper fragment will materially assist in keeping this fragment in position and give an additional point for the better traction The lower fragment is held in position by means of adhesive strips pulling it upward and prevent the tilting which sometimes occurs Passive motion can be instituted and kept up as much as may be deemed necessary without disturbance to the apparatus or fragments

69 **Treatment of Typhoid**—Maguire noted when treating children with summer diarrhea that shortly after giving them nitrogenous food in the form of milk or beef tea, their temperature would always rise whereas when giving them a carbohydrate diet, in the form of barley or rice water, this rarely happened He was led to discard milk in typhoid from this and other considerations and now never uses it He compares the statistics of typhoid mortality in the American army during the Spanish-American war, where milk was largely used with those of the Japanese army in the Russo-Japanese war where rice water was used in typhoid and dysentery He describes the steps of investigation by which he was led to his present injection treatment, in which he administers per rectum from 3 to 5 drops of phenol in a pint of sterile water by means of a fountain syringe a foot above the patient About an hour was allowed for the injection using a gauge with a water glass attachment Maguire has used this treatment also in pneumonia and gastritis He has treated 138 cases by this method, with success

Journal of Nervous and Mental Disease, New York.

July

71 Disease of the Primary Motor Neurons Causing the Clinical Picture of Acute Anterior Poliomyelitis the Result of Poisoning by Cyanid of Potassium J Collins and H S Maitland New York
72 *Significance of Phrictopathic Sensation E Jones, London
73 Tumor of the Frontal Lobes with Symptoms Simulating Paresis F. X Dercum Philadelphia

72 **Phrictopathic Sensation**—Jones says that during the process of recovery from a hysterical anesthesia, a great variety of abnormal sensations may be experienced by the patient when the part in question is stimulated Certain features characteristic of these sensations occur in such constant association that he includes them in a single group, for which he proposes the term 'phrictopathic" These are· 1, Abnormal persistence of the sensation of cutaneous stimulus; 2, delayed reaction time, 3, non perception when a more normal sensation is present, 4, tendency to immediate motor response, 5 disagreeable quality of the sensation, 6, impairment of the sense of personal ownership The author concludes that sensations showing the six features here grouped together under the designation "phrictopathic" are due to a cleavage between the esthetic sensibilities and the autosomatognostic memory feelings of a part of the body, which results from hysterical disaggregation implicating the latter group of mental processes, the degree to which the features are marked is a measure of the extent of this cleavage.

Journal Missouri State Medical Association, St. Louis.

July

74 Relation Between Diseases of the Skin and Diseases of Other Organs of the Body J Duncan St Louis
75 *Sphere of Modern Surgery in the Relief of Stomach Disorders H F Pearse, Kansas City
76 Stricture of the Esophagus C E Fulton Springfield
77 Unclassified Conclusions in Otolaryngology F C. Ewing, St Louis
78 History of Amputations I Have Done Above the Shoulder Joint G Halley, Kansas City
79 General Anesthesia J J Farrell, Hannibal.
80 Leukemia P Donohoo Joplin

75 **Surgery in Stomach Disorders.**—Pearse recognizes two great classes of disorders of the digestive function, both curable by surgical operation The one an array of diseases of the gastric structure itself, the other reflected, so to speak, from other organs Of the gastric neuroses, so called, he merely states that operation should cease when it finds a normal abdomen in so far as its visible anatomy is concerned The ulcer cases should be attacked surgically, either by excision or by a gastroenterostomy according to the case The cicatricial contractions should be attacked and cured surgically by pyloroplasty or by a gastroenterostomy

The duodenal ulcers should be attacked and cured surgically by gastroenterostomy or by excision, according to location The cancer cases should be attacked surgically and the diseased area removed, if it is possible to hope for a cure, if this is impossible, from the great advance made by the disease, a gastroenterostomy relieves pain and prolongs life

Buffalo Medical Journal.

July

81 *Acute Pancreatitis Report of Four Additional Cases with Autopsies C G Stockton and H U Williams Buffalo
82 *Bacterial Vaccines in Relation to Ordinary Pyogenic Processes N K MacLeod Buffalo
83 Stanford Emerson Chaille L S McMurtry, Louisville, Ky

81. **Acute Pancreatitis.**—Stockton and Williams add three new cases of this disease to the four already reported to them. They comment on them, and, as to etiology, consider the claims of traumatism, gallstones, infection, gastroduodenal catarrh, certain causes inherent in the pancreas itself, arteriosclerosis and embolism and thrombosis, to be classed as factors.

82. **Bacterial Vaccines.**—MacLeod says that in staphylococcic infections the efficacy of the vaccines is, in his opinion, beyond question. The results have been so uniformly satisfactory in boils, carbuncles, septic infections following wounds, sycosis, felons and similar lesions, that he feels that they are the most valuable assets at our disposal to-day. There can be no doubt that a stock vaccine is possible, but every staphylococcic vaccine is not suited to be used as a stock vaccine. It is rare to find one that gives uniform and satisfactory results in all cases; the dosage of almost every vaccine varies considerably; it is only after repeated trials that we either adopt a vaccine or settle on the appropriate dose. Again, every case has to be considered from other standpoints than that of vaccination. The isolation of the focus from the influence of the body fluids must be considered—it is manifestly impossible for the protective substances *to have any* influence on a focus walled in by a thick pyogenic membrane; again, any patient who is in a pronounced anemic condition can scarcely be expected to respond to inoculation, since those factors that have to do with the manufacture of the protective antibodies are evidently suffering with the general body depression. Finally, the question of the clotting power of the blood must be borne in mind; frequently patients with a high clotting power do not respond satisfactorily until this has been lowered by appropriate means. In regard to the streptococcic infections he asserts that, with the exception of the *Streptococcus erysipelatis*, a stock vaccine, in his opinion, is valueless. Polyvalent vaccines composed of strains of bacteria that have been of the greatest benefit in their specific cases, have proved of no avail whatever when used indiscriminately.

Louisville Monthly Journal.

July.

84 Acute Cholecystitis. H. H. Grant, Louisville.
85 Tuberculous Infection Through Milk. E. C. Schroeder, Bethesda, Md.
86 Extracts from the War Correspondence of the Late Dr. James M. Holloway. A. H. Rice, Leesburg, Ky.
87 Etiology of Syphilis. H. H. Koehler, Louisville.
88 Brain Abscess Following Middle-Ear Suppuration. A. O. Pfingst, Louisville.
89 Legal Relations of the Railroad Surgeon to Railroad Companies and the Duty of Injured Person to Make His Loss or Damage on Account of His Injury as Light as Possible. B. D. Warfield, Louisville.

Texas State Journal of Medicine, Fort Worth.

July.

90 *Diverticulosis and Diverticulitis. J. J. Terrill, Galveston, Texas.
91 Imperfections of the Vital Statistics Laws of Texas and a Possible Remedy. L. R. Bibb, Pass Cavallo.
92 Work Done by the State Health Department. W. B. Brumby, Austin.
93 Appendicostomy. W. B. Russ, San Antonio.
94 Work Done by the State Board of Medical Examiners. G. B. Foscue, Waco.

90. **Diverticulosis and Diverticulitis.**—Terrell urges that the terms diverticulosis and diverticulitis should have definite places in medical nomenclature, and should have definite meanings assigned to them. The possibility of the presence of these conditions should be borne in mind, especially in the aged. A more careful routine examination of the sigmoid and rectum in autopsies should be made to determine more nearly the relative frequency and the class of cases in which diverticula occur. It is to the surgeons that we must look for careful records of the clinical aspects of diverticulitis, and on them also must we depend for much of the pathologic detail.

New York State Journal of Medicine, New York.

July.

95 *Chronic Middle-Ear Deafness. W. S. Bryant, New York.
96 Chronic Suppurative Cystitis: Treatment and Prognosis. V. C. Pedersen, New York.
97 Heredity in Disease. C. W. [illegible]
98 Neuropathic Diathesis as C[illegible] nd Other Functional Diseases. G. [illegible]
99 When and How Shall We Use Cycloplegics in Refraction Work? A. Duane, New York City.
100 *Medical Libraries for the Smaller Centers. S. Baker, Utica.
101 Effect of Alcohol on Secretion and Digestion. H. C. Jackson, Albany.
102 Esophagoscopy and Bronchoscopy, with Reports of Six Cases. T. H. Halsted, Syracuse.
103 The Purse-String Suture, Its Right and Wrong Application in Appendicectomy. J. F. Black, White Plains.
104 Lives of Officers of the Medical Society of the State of New York. J. J. Walsh, New York.

95 and 100. Abstracted in THE JOURNAL, Feb. 29, 1908, p. 722.

The Ohio State Medical Journal, Columbus, Ohio.

July 15.

105 *Annual Address in Medicine. F. Forchheimer, Cincinnati.
106 Gonorrheal Arthritis. G. L. Bauman, Cleveland.
107 *The Homeopathy of Hahnemann Compared with the Homeopathy of To-day. C. Higgins, Zanesville.
108 *Medical Fee Bills. W. B. Patton, Springfield.
109 Pemphigus Foliaceus. E. D. Tucker, Toledo.
110 Treatment of Earache Without Operation. W. E. Murphy, Cincinnati.
111 Indication and Technic for Incising the Drumhead in Acute Otitis Media. O. B. Monosmith, Loraine.

105. Abstracted in THE JOURNAL, May 23, 1908, p. 1720.

107, 108. Abstracted in THE JOURNAL, Sept. 28, 1907, p. 1139.

Journal of the Kansas Medical Society, Kansas City.

July.

112 *Prostatic Hypertrophy. L. H. Munn, Topeka.
113 Faucial Tonsils. Their Anatomy, Physiology and Removal. J. Ogsell, Wichita, Kans.
114 Antitoxin in Diphtheria. F. Campbell, Kansas City, Kans.
115 Iritis. A. C. Graves, Pittsburg.
116 Treatment of Fractures. J. G. Sheldon, Rosedale.

112. Abstracted in THE JOURNAL, May 3, 1908, p. 1828.

Journal of the Tennessee State Medical Association, Nashville.

July.

117 *Ophthalmia Neonatorum as a Sociologic Problem. H. Wood, Nashville.
118 *Intramural Injections of Salicylate of Mercury in Treatment of Syphilis. J. W. Handy, Nashville.
119 *Snoring, Mouth-Breathing, etc. G. E. Vaughan, Clarksville.
120 *Case of Obstruction to the Ureter. M. C. McGannon, Nashville.

117 and 120. Abstracted in THE JOURNAL, April 25, 1908, p. 1372.

118, 119. Abstracted in THE JOURNAL, May 2, 1908, p. 1453.

Mississippi Medical Monthly, Vicksburg.

July.

121 The Race Problem. What Shall We Do With Our Negro Consumptives?
122 The Calomel and [illegible] Klotz, Summit.
123 The Practitioner's [illegible] Bullitt, University.

Journal of the South Carolina Medical Association, Greenville.

June.

124 Differential Diagnosis of Appendicitis. J. M. T. Finney, Baltimore.
125 So Called Continued Fevers. J. J. Watson, Columbia.
126 Tumor of the Carotid Gland. R. S. Cathcart, Charleston.

Journal of the Oklahoma State Medical Association, Guthrie.

June.

127 The Surgical Prostate. H. Reed, Oklahoma City.
128 Periodical Headaches. J. M. Postelle, Oklahoma City.

July.

129 Pilocarpin in Strychnin Poisoning. J. D. Batson, Marietta.
130 Cardiovascular Changes in Renal Diseases. A. W. White, Oklahoma City.

St. Paul Medical Journal.

July.

131 Chloroform Anesthesia. E. Boeckmann, St. Paul.
132 Ether Anesthesia. W. Davis, St. Paul.
133 Experience with Hyoscin-Morphin Anesthesia in Obstetrics. B. H. Ogden, St. Paul.
134 Apparatus for Rectal Anesthesia; Fergus Ether Inhaler. C. F. Denny, St. Paul.
135 Anesthesia. H. Sneve, St. Paul.
136 Statistical Aspects of Tuberculosis in Minnesota. C. Easton, St. Paul.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

August 1.

1 *President's Address, British Medical Association. S. Snell.
2 *Modern Medicine. J. K. Fowler.
3 *Prophylaxis in Surgery. R. J. Pye-Smith.

1 **Miners' Nystagmus and Fire Damp**—In his presidential address before the British Medical Association this year, Snell called attention to Sheffield as the cradle of the study of industrial diseases" He instanced the work of Knight and Holland at the beginning of the 19th century on miners' and knife grinders' phthisis, that of Hall in 1865 on lead poisoning among file cutters and fell back for an illustration of the profitableness of a partnership between industrial pursuits and a life close to Nature on Buchan's appreciation of the workingmen's gardens in Sheffield in 1760 Snell cites four well marked groups of affections of the eye of different causation representing many occupations Of these he selects for special comment miners' nystagmus concerning which many years ago he made the observation that has proved to be the essential part in the etiology of the affection, namely, that the cases that came under his notice were always in men who had to work in a constrained position that resulted in weariness of the elevator muscles He explains the importance and the usual method of detecting fire damp in mines by the presence of a pale blue flame, or 'gas cap' above the turned down flame of the safety lamp His investigations have demonstrated that the apparent 'dancing" of the safety lamps which is a prominent feature of miners' nystagmus, is, as he had suspected, a serious hindrance to the recognition of a gas cap This was shown in the case of forty eight miners from thirteen different collieries, all of whom were incapable of detecting a gas cap unless a dangerous amount of gas was present This leads him to urge a periodical medical examination of officials, and in the case of a colliery explosion, an inquiry into the visual condition of those responsible for determining the presence of gas in dangerous proportion

2 **Modern Medicine**—Fowler, in the address in medicine, repeats the assertions made by him last year (*Lancet*, Nov 9, 1907, abstracted in THE JOURNAL, Dec 7, 1907, p 1937), that having regard to the wide field which it covers, the advance of medicine during the last thirty years has been infinitely greater in the mass than that of surgery although, perhaps, not so readily appreciable by the public, and he expresses a confident belief that we need have no fear for the future He reviews the position in regard to a few of the more urgent problems confronting us as affecting the art and science of medicine, the student, practitioner, physician and profession After touching on the place of Pasteur and Lister in medical science, Fowler discusses at considerable length vaccine therapy and the process of immunization, regarding which the evidence appears to him to be overwhelming that agents other than the leucocytes play the more important part in the process He thinks it likely from present indications that we may ultimately possess an effective remedy for malignant endocarditis, and refers to the official endorsement by the British, German and Indian governments of Wright's antityphoid inoculation He considers, however, that the greatest degree of interest attending the bacterial vaccine question centers around pulmonary tuberculosis He contrasts the verdict of eight physicians at the Brompton Hospital, in 1890, after a careful trial of the old tuberculin—that they failed to observe any favorable influence, but found serious dangers accompanying its use—with the fact that the new tuberculin is now being used at Brompton Hospital and elsewhere without any of the disastrous results mentioned in the former report This he attributes to the control of the opsonic index He then discusses the theory of autoinoculation, and referring to the system of graduated labor introduced at the Frimley Sanatorium by Dr M S Paterson, says that in afebrile cases when this treatment is supervised with exact knowledge of the individual it may render opsonic technic unnecessary The sanatorium and vaccine therapy he considers so far from antagonistic that they will prove of mutual assistance

It is to be hoped, he says, that there will never be a repetition of the lamentable lack of judgment, of self control, and of those critical faculties which should characterize the members of a scientific profession which were displayed in 1890 and the following years If to morrow we were in possession of an absolutely certain remedy for pulmonary tuberculosis it is probable that nearly two thirds of the existing cases would be beyond the hope of cure There is no drug known which is not limited in its effects by conditions of the body and the extent of the disease, which latter in cases of pulmonary tuberculosis is generally about three times greater than the physical signs indicate Ought not these facts, he asks to give pause to those irresponsible directors of the lay press who are careless of the hopes they excite or the grief which they cause, so long as they obtain sensational copy which will increase the sale of their papers'

Passing to the second division of his subject, Dr Fowler expresses his confidence that more and more the preliminary and intermediate training of the student will take place in universities, leaving the purely clinical studies to the medical schools, thus necessarily associated with hospitals He discusses the abuse of medical charities and lays his finger on the source of the evil when he says 'This abuse of the generosity of the profession will in my belief continue and increase, so long as it is to the interest of the managers of hospitals to show that they are doing what it is the fashion to call a great work'" The moment that the relief of mere numbers ceases to be a merit and it becomes to their interest to show that they have done everything possible to insure that those who receive gratuitous medical treatment are really deserving of it, a great falling off in the attendance will immediately occur As to the physician of the future, Fowler demurs to Wright's idea that he will be merely an immunizator, and submits that he must continue to be in the future as he has been in the past, above all things a man of wide clinical experience The one thing that can not be read up is diagnosis That must be learned at the bedside He says

'It must have occurred to every physician to be called to a case in which the condition of the blood and of every secretion that lends itself to examination had been carefully investigated, not once only, but several times, and yet the diagnosis was as far, if not further, off than ever, whereas, an intelligent use of the old fashioned methods of inspection, palpation, percussion and auscultation showed that it was literally staring one in the face"

He would not, however, be thought to undervalue the very great assistance given to diagnosis by the newer methods He only urges that the older should not be allowed to fall into disuse

3 **Prophylaxis in Surgery**—Pye Smith, in the Address in Surgery, holds prophylaxis as important in surgery as in medicine or obstetrics, or even in sanitary science He discusses legislative prophylaxis, the prevention of accidents, reduction of risk in working with poisonous substances, etc Then turning to prophylaxis in operative surgery, he says that we are especially concerned with the prophylaxis of pain, of hemorrhage, of shock, of sepsis, and of death Various forms of anesthesia and pressure forceps have brought efficient prophylaxis of pain and hemorrhage within our reach As to shock, not enough attention is paid to avoidance of the loss of warmth prior to and during operation The preliminary starvation before anesthesia, if carried too far, may cause serious depression, and thus tend to shock So also may the terrifying effect on a nervous person of being brought into the operating room before anesthesia Sepsis, of course, may be prevented by careful attention to well known measures, among which he insists on the use of gloves He then discusses the surgical prophylaxis of disease and accidents in various parts of the body, and notably he insists that in appendicitis, while the interval operation is an excellent one when that stage is present, it is bad to allow a patient to die in the acute stage while waiting for the quiescent period in which to operate He discusses the prophylactic surgery of the eye, nasopharynx, teeth, ear, chest abdomen, pelvis and extremities, and of cancer, syphilis and suicide, and concludes by urging that we "think prophylactically"

Lancet, London.

August 1

4 *President's Address, British Medical Association S Snell
5 *Modern Medicine J K Fowler
6 *Prophylaxis in Surgery R J Pye Smith
7 Blood Changes in Ankylostomiasis A H Brehaut
8 Case of Carcinoma of the Jejunum with Remarks on Malignant Disease of the Small Intestine C R Keyser
9 *Treatment of Erysipelas H T Gray
10 Malarial Cirrhosis of the Liver A J B Duprey
11 An Unusual Fracture of the Clavicle J W Rob

4, 5, 6. See abstracts 1, 2, 3.

9. **Erysipelas.**—Gray reports a series of six cases of erysipelas treated by Metchnikoff's serum, which, while too few to justify a definite conclusion, warrant, in his opinion, a further trial of that preparation, which he thinks more constant in its results than the antistreptococcal serum. The patients were all children between 1 year and 10 years of age

Medical Press and Circular, London.

July 29.

12 *Duodenal Ulcer. B G. A Moynihan
13 Acquired Atresia of the Introitus and Vagina in the Adult H. MacNaughton-Jones
14 Construction and Management of Crematoria C K Millard
15 Bier's Method for Practitioners M Auffret

12. **Duodenal Ulcer.**—Moynihan says that a knowledge of duodenal ulcer has grown out of operations for supposed gall stone disease, at which the gall bladder was found healthy, but ulceration commencing with stenosis was found in the duodenum. Gradually the symptomatology of duodenal ulcer became established, because after the surgeon had seen these cases he was able to learn from the patient the symptoms in greater detail; so the medical view, that duodenal ulcer was rare and difficult to recognize clinically, became altered altogether. It is now known to be very common and that it can be recognized with absolute certainty in nine cases out of ten Duodenal ulcer, as it is seen, is almost invariably a small hard round ulcer, situated within half an inch of the pylorus and nearly always on the anterior surface of the duodenum, exactly where the first squirt through the pylorus would impinge on the duodenal mucosa, and this slight traumatism is no doubt a factor of some significance Moynihan says "If you are present at an operation for what are supposed to be symptoms of duodenal ulcer and you do not see the ulcer, do not believe it is there, . . . for it requires no imagination on the part of the surgeon or the audience to recognize it instantly." Duodenal ulcer exists more commonly in men than in women, viz, about two to one. Patients may suffer from it at both extremes of life. The symptoms in most cases are perfectly characteristic, but are described under a different name in the text-books In the latter is described under duodenal ulcer, not duodenal ulcer as it should be recognized, but neglected duodenal ulcer It is about as justifiable to include perforation and hemorrhage among the symptoms of duodenal ulcer, as it would be to include ruptured perineum among the symptoms of pregnancy Moynihan describes the symptoms of duodenal ulcer as follows:

> The patient tells you that he has certain definite attacks and if you take the history given in detail, letting the man tell his own story, he will give you the impression of having read something which has been written about duodenal ulcer which he is recounting to the best of his recollection to please you He says that his trouble comes on in attacks, which are nearly always worse in winter than in summer, and are very apt to be precipitated by a chill Let us follow the patient through the day He makes a meal at eight in the morning, and from 2 to 2½ hours after it he is fairly comfortable, it is his best time At the end of that time he has a feeling of discomfort in the epigastrium; he feels full and heavy, and may get some relief from the belching of gas Some of these patients develop a habit of belching They may bring up a very sour fluid, which tastes very bitter and acid, and makes the mouth dry and the teeth chalky This pain gradually increases until the next meal time comes To this I some years ago applied the name of 'hungry pain." At the next meal the patient almost instantly gets relief, and that relief persists for two or three hours again He probably eats a heavy dinner, and will nearly always tell you he has *something* before he gets into bed, a glass of milk or a cup of cocoa and a biscuit He sleeps comfortably until he wakes about 2 a m He gets relief from nibbling a biscuit, which he keeps at the bedside The pain is found to be most relievable by something stodgy and indigestible Taking an alkali relieves the pain; so will emptying the stomach by washing it out If these symptoms which I have described are recurrent, you can diagnose duodenal ulcer.

Moynihan then discusses the differential diagnosis, and particularly notes that, after mistaking gallstone cases for duodenal ulcer, on talking it over with the patients he found that those with gallstones nearly always had a spasm of the diaphragm with a catch in the breath in an attack of pain, a symptom which he believes to be absolutely significant. Another indication of gallstones is a jaundice, too light to be evident to the naked eye or in the stools or urine, but perceptible in the blood as a deepening of the tinge of the serum after the corpuscles have settled in a capillary tube. As to treatment, perforation necessitates instant operation Moynihan has made it a practice, in such cases, first to close the ulcer and secondly to perform gastroenterostomy. The second indication for operation is the occurrence of hemorrhage, which is likely to be fatal in duodenal ulcer, differing in this respect from gastric ulcer, in which death from hemorrhage is rare. The ulcer should always be infolded. If he feels that he should not excise the ulcer he *endeavors to secure by suture all the vessels* running to it. Chronic duodenal ulcer causing the manifestations mentioned should be treated surgically, but gastric ulcers may often do well medically. He discusses the various operations.

Clinical Journal, London.

July 29

16 Injuries to the Head A. A. Bowlby.
17 Sprains. J. J. Clarke.

Quarterly Journal of Medicine, Oxford.

July.

18 *Direct Inspection of the Gastric Mucous Membrane. H S. Souttar and T. Thompson
19 *Clinical Bearing of Cutaneous Tenderness on Various Acute Abdominal Disorders, Especially Appendicitis. H. Robinson.
20 *Origin of Endogenous Uric Acid E. P. Cathcart, E. L. Kennaway and J B Leathes.
21 *Respiratory Movements in Hemiplegia: Case with Tracings Showing the Movements of the Two Sides, and the Peculiar Effects of Coughing, and a Cyrtometer Tracing Showing Peculiar Changes in the Shape of the Paralyzed Thorax S. West
22 *Primary Malignant Disease of the Appendix. R. G. Elwell.
23 Pads on the Finger Joints W. H White
24 Extrasystole· Contribution to the Functional Pathology of the Primitive Cardiac Tissue J. McKenzie

18 **Inspection of Gastric Mucous Membrane.**—Souttar and Thompson describe their newly invented gastroscope, which consists essentially of a series of short tubes strung together on two narrow steel bands and encased in rubber On pulling the steel-bands, the instrument can be converted into a rigid tube. There is a small electric lamp The entire stomach wall can be swept with the instrument, about six inches being visible at once The article is illustrated.

19. **Cutaneous Tenderness.**—Robinson refers to the ten conclusions drawn by Sherren (*Lancet*, 1903, ii, 816) in a paper drawing attention to the frequency of cutaneous tenderness in appendicitis, its distribution, determination and clinical bearings Sherren believed that information concerning the appendix could be obtained in this way. Robinson examines Sherren's conclusions in detail, and embodies his own deductions in a series of propositions of which some are a repetition of Sherren's conclusions, and others are not. Robinson's deductions are as follows:

> 1 In diseases of the appendix, or originating there, cutaneous tenderness is sometimes present· most commonly in the skin innervated from the eleventh dorsal segment of the spinal cord, but also sometimes in the territory of the ninth, tenth and twelfth, and possibly of the eighth dorsal and first lumbar segments
>
> 2 The areas of such tenderness are most frequently of three main forms described by Mr. Sherren in the *Lancet* of Sept 19, 1903. But cases are not rare in which the areas are irregular
>
> rea of superficial tenderness of one
> is, in the great majority of cases,
>
> diseases may resemble appendicitis in this respect for instance, renal colic, perforated duodenal ulcer, intestinal colic, perimetritis
>
> 5 Inflammation of the nerve trunks is not the cause of this symptom, for the latter may occur in skin supplied by the posterior primary divisions of the spinal nerves
>
> 6 There is little evidence as to the immediate cause of this reflex tenderness, but it is probably irritation of the afferent *nerves from the appendix: the irritant is possibly in some cases* tension, in others it is almost certainly something different
>
> 7. The symptom is found in a minority only of the cases of appendicitis seen in hospital practice It may vary in character, or disappear altogether, while a case is under observation; during the progress of an attack it may appear in a patient in whom it has not originally been present
>
> 8 Cutaneous tenderness is found as frequently in subsequent as in first attacks of appendicitis. It may persist long after all other signs of the disease have disappeared
>
> 9 The prognostic and therapeutic significance of cutaneous tenderness in cases of appendicitis is slight It is somewhat less often found in cases of abscess than in other cases; when the symptom and an abscess coexist, it is usually in an early case
>
> 10 Cases of widespread peritonitis set up by appendicitis may display large areas of cutaneous tenderness over the right side, or over the whole, of the abdomen

20. **Endogenous Uric Acid.**—Cathcart, Kennaway and Leathes close an exhaustive paper with the following conclusions:

> 1 A marked increase in the output of endogenous uric acid has been found to occur in three conditions (a) fever, (b) exposure to cold, (c) after severe exertions. The increased output coincides and terminates with the febrile rise of temperature, coincides with

1. **Miners' Nystagmus and Fire Damp.**—In his presidential address before the British Medical Association this year, Snell called attention to Sheffield as the "cradle of the study of industrial diseases." He instanced the work of Knight and Holland at the beginning of the 19th century on miners' and knife grinders' phthisis, that of Hall in 1865 on lead poisoning among file cutters, and tell back for an illustration of the profitableness of a partnership between industrial pursuits and a life close to Nature on Buchan's appreciation of the workingmen's gardens in Sheffield in 1769. Snell cites four well marked groups of affections of the eye of different causation representing many occupations. Of these he selects for special comment miners' nystagmus, concerning which many years ago he made the observation that has proved to be the essential part in the etiology of the affection, namely, that the cases that came under his notice were always in men who had to work in a constrained position that resulted in weariness of the elevator muscles. He explains the importance and the usual method of detecting fire damp in mines by the presence of a pale blue flame, or "gas cap" above the turned down flame of the safety lamp. His investigations have demonstrated that the apparent "dancing" of the safety lamps which is a prominent feature of miners' nystagmus, is, as he had suspected, a serious hindrance to the recognition of a gas cap. This was shown in the case of forty eight miners from thirteen different collieries, all of whom were incapable of detecting a gas cap unless a dangerous amount of gas was present. This leads him to urge a periodical medical examination of officials, and in the case of a colliery explosion, an inquiry into the visual condition of those responsible for determining the presence of gas in dangerous proportion.

2. **Modern Medicine.**—Fowler, in the address in medicine, repeats the assertions made by him last year (*Lancet*, Nov 9, 1907, abstracted in THE JOURNAL, Dec 7, 1907, p 1957), that having regard to the wide field which it covers, the advance of medicine during the last thirty years has been infinitely greater in the mass than that of surgery, although, perhaps, not so readily appreciable by the public," and he expresses a confident belief that we need have no fear for the future. He reviews the position in regard to a few of the more urgent problems confronting us as affecting the art and science of medicine, the student, practitioner, physician and profession. After touching on the place of Pasteur and Lister in medical science, Fowler discusses at considerable length vaccine therapy and the process of immunization, regarding which the evidence appears to him to be overwhelming that agents other than the leucocytes play the more important part in the process. He thinks it likely from present indications that we may ultimately possess an effective remedy for malignant endocarditis, and refers to the official endorsement by the British, German and Indian governments of Wright's antityphoid inoculation. He considers, however, that the greatest degree of interest attending the bacterial vaccine question centers around pulmonary tuberculosis. He contrasts the verdict of eight physicians at the Brompton Hospital, in 1890, after a careful trial of the old tuberculin—that they failed to observe any favorable influence, but found serious dangers accompanying its use—with the fact that the new tuberculin is now being used at Brompton Hospital and elsewhere without any of the disastrous results mentioned in the former report. This he attributes to the control of the opsonic index. He then discusses the theory of autoinoculation, and referring to the system of graduated labor introduced at the Frimley Sanatorium by Dr M. S Paterson, says that in afebrile cases when this treatment is supervised with exact knowledge of the individual it may render opsonic technic unnecessary. The sanatorium and vaccine therapy he considers so far from antagonistic that they will prove of mutual assistance.

It is to be hoped, he says, that there will never be a repetition of the lamentable lack of judgment, of self control, and of those critical faculties which should characterize the members of a scientific profession which were displayed in 1890 and the following years. If to morrow we were in possession of an absolutely certain remedy for pulmonary tuberculosis it is probable that nearly two thirds of the existing cases would be beyond the hope of cure. There is no drug known which is not limited in its effects by conditions of the body and the extent of the disease, which latter in cases of pulmonary tuberculosis is generally about three times greater than the physical signs indicate. Ought not these facts, he asks, to give pause to those irresponsible directors of the lay press who are careless of the hopes they excite or the grief which they cause, so long as they obtain sensational copy which will increase the sale of their papers?

Passing to the second division of his subject, Dr Fowler expresses his confidence that more and more the preliminary and intermediate training of the student will take place in universities, leaving the purely clinical studies to the medical schools, thus necessarily associated with hospitals. He discusses the abuse of medical charities and lays his finger on the source of the evil when he says "This abuse of the generosity of the profession will in my belief continue and increase, so long as it is to the interest of the managers of hospitals to show that they are doing what it is the fashion to call 'a great work'." The moment that the relief of mere numbers ceases to be a merit and it becomes to their interest to show that they have done everything possible to insure that those who receive gratuitous medical treatment are really deserving of it, a great falling off in the attendance will immediately occur. As to the physician of the future, Fowler demurs to Wright's idea that he will be merely an immunizator, and submits that he must continue to be in the future as he has been in the past, above all things a man of wide clinical experience. The one thing that can not be read up is diagnosis. That must be learned at the bedside. He says

"It must have occurred to every physician to be called to a case in which the condition of the blood and of every secretion that lends itself to examination had been carefully investigated, not once only, but several times, and yet the diagnosis was as far, if not farther, off than ever; whereas, an intelligent use of the old fashioned methods of inspection, palpation, percussion and auscultation showed that it was literally staring one in the face."

He would not, however, be thought to undervalue the very great assistance given to diagnosis by the newer methods. He only urges that the older should not be allowed to fall into disuse.

3 **Prophylaxis in Surgery.**—Pye Smith, in the Address in Surgery, holds prophylaxis as important in surgery as in medicine or obstetrics, or even in sanitary science. He discusses legislative prophylaxis, the prevention of accidents, reduction of risk in working with poisonous substances, etc. Then turning to prophylaxis in operative surgery, he says that we are especially concerned with the prophylaxis of pain, of hemorrhage, of shock, of sepsis, and of death. Various forms of anesthesia and pressure forceps have brought efficient prophylaxis of pain and hemorrhage within our reach. As to shock, not enough attention is paid to avoidance of the loss of warmth prior to and during operation. The preliminary starvation before anesthesia, if carried too far, may cause serious depression, and thus tend to shock. So also may the terrifying effect on a nervous person of being brought into the operating room before anesthesia. Sepsis, of course, may be prevented by careful attention to well known measures, among which he insists on the use of gloves. He then discusses the surgical prophylaxis of disease and accidents in various parts of the body, and notably he insists that in appendicitis, while the interval operation is an excellent one when that stage is present, it is bad to allow a patient to die in the acute stage while waiting for the quiescent period in which to operate. He discusses the prophylactic surgery of the eye, nasopharynx, teeth, ear, chest, abdomen, pelvis and extremities, and of cancer, syphilis and suicide, and concludes by urging that we "think prophylactically."

Lancet, London.

August 1

4 *President's Address, British Medical Association S Snell
5 *
6 *
Smith
7
8 A H Brehaut
with Remarks on Malig
ne C R Keyser
9 * [illegible] Gray.
10 Malarial Cirrhosis of the Liver A J B Duprey
11 An Unusual Fracture of the Clavicle J W Rob.

4, 5, 6. See *abstracts* 1, 2, 3.

9. **Erysipelas.**—Gray reports *a series of six cases* of erysipelas treated by Metchnikoff's serum, which, while too few to justify a definite conclusion, warrant, in his opinion, a further trial of that preparation, which he thinks more constant in its results than the antistreptococcal serum. The patients were all children between 1 year and 10 years of age.

Medical Press and Circular, London.

July 29.

12 *Duodenal Ulcer. B. G. A. Moynihan.
13 Acquired Atresia of the Introitus and Vagina in the Adult H. MacNaughton-Jones.
14 Construction and Management of Crematoria. C. K. Millard.
15 Bier's Method for Practitioners. M. Auffret.

12. **Duodenal Ulcer.**—Moynihan says that a knowledge of duodenal ulcer has grown out of operations for supposed gallstone disease, at which the gall bladder was found healthy, but ulceration commencing with stenosis was found in the duodenum. Gradually the symptomatology *of duodenal ulcer* became established, because *after the surgeon* had seen these cases he was able to learn from the patient the symptoms in greater detail; so the medical view, that duodenal ulcer was rare and difficult to recognize clinically, became altered altogether. It is now known to be very common and that it can be recognized with absolute certainty in nine cases out of ten Duodenal ulcer, as it is seen, is *almost* invariably a small hard round ulcer, situated within half an inch of the pylorus and nearly always on the anterior surface of the duodenum, exactly where the first squirt through the pylorus would impinge on the duodenal mucosa, and this slight traumatism is no doubt a factor of some significance. Moynihan says: "*If you are present at an operation for what are* supposed to be symptoms of duodenal ulcer and you do not see the ulcer, do not believe it is there, . . . for it requires no imagination on the part of the surgeon or the audience to recognize it instantly." Duodenal ulcer exists more commonly in men than in women, viz., about two to one. Patients may suffer from it at both extremes of life. The symptoms in most cases are perfectly characteristic, but are described under a different name in the text-books. In the latter is described under duodenal ulcer, not duodenal ulcer as it should be recognized, but neglected duodenal ulcer. It is about as justifiable to include perforation and hemorrhage among the symptoms of duodenal ulcer, as it would be to include ruptured perineum among the symptoms of pregnancy. Moynihan describes the symptoms of duodenal ulcer as follows:

> The patient tells you that he has certain definite attacks; and if you take the history given in detail, letting the man tell his own story, he will give you the impression of having read *something which has been written about duodenal ulcer*, which he is recounting to the best of his recollection to please you. He says that his trouble comes on *in attacks*, which are nearly always worse in winter than in summer, and are very apt to be precipitated by a chill. Let us follow the patient through the day. He makes a meal at eight in the morning, and from 2 to 2½ hours after it he is fairly comfortable; it is his best time. At the end of that time he has a feeling of discomfort in the epigastrium; he feels full and heavy, and may get some relief from the belching of gas. Some of *these patients* develop a habit of belching. They may bring up a very sour fluid, which tastes very bitter and acid, and *makes the mouth dry* and the teeth chalky. This pain gradually increases until the next meal time comes. To this I some years ago applied the name of "hungry pain." At the next meal the patient almost instantly gets relief, and that relief persists for two or three hours again. He probably eats a heavy dinner, and will nearly always tell you he has something before he gets into bed; a glass of milk or a cup of cocoa and a biscuit. He sleeps comfortably, until he wakes about 2 a. m. He gets relief from nibbling a biscuit, which he keeps at the bedside. *The pain is found* to be most relievable by something stodgy and indigestible. Taking an alkali relieves the pain; so will emptying the *stomach by* washing it out. If these symptoms which I have described are recurrent, you can diagnose duodenal ulcer.

Moynihan *then discusses the differential* diagnosis, and particularly notes that, after mistaking gallstone cases for duodenal ulcer, on talking it over with the patients he found that those with gallstones nearly always had a spasm of the diaphragm with a catch in the breath in an attack of pain, a symptom *which he believes to be absolutely* significant. Another indication of gallstones is a jaundice, too light to be evident to the naked eye or in the stools or urine, but perceptible in the blood as a deepening of the tinge of the serum after the corpuscles have settled in a capillary tube. As to treatment, perforation necessitates instant operation. Moynihan has made it a practice, in such cases, first to close the ulcer and secondly *to perform* gastroenterostomy. The second indication for operation is the occurrence of hemorrhage, which is likely to be fatal in duodenal ulcer, differing in this respect from gastric ulcer, in which death from hemorrhage is rare. The ulcer should always be infolded. If he feels that he should not excise the ulcer he endeavors to secure by suture all the vessels *running to it*. Chronic duodenal ulcer causing the manifes*tations mentioned* should be treated surgically, but gastric ulcers may often do well medically. He discusses the various operations.

Clinical Journal, London.

July 29.

16 *Injuries to the Head.* A. A. Bowlby.
17 Sprains. J. J. Clarke.

Quarterly Journal of Medicine, Oxford.

July.

18 *Direct Inspection of the Gastric Mucous Membrane. H. S. Souttar and T. Thompson.
19 *Clinical Bearing of Cutaneous Tenderness on Various Acute Abdominal Disorders, Especially Appendicitis. H. Robinson.
20 *Origin of Endogenous Uric Acid. E. P. *Cathcart*, E. L. Kennaway and J. B. Leathes.
21 *Respiratory Movements in Hemiplegia: Case with Tracings Showing the Movements of the Two Sides, and the Peculiar Effects of Coughing, and a Cyrtometer Tracing Showing Peculiar Changes in the Shape of the Paralyzed Thorax. S. West.
22 **Primary Malignant Disease* of the Appendix. R. G. Elwell.
23 Pads on the Finger Joints. W. H. White.
24 Extrasystole: Contribution to the Functional Pathology of the Primitive Cardiac Tissue. J. McKenzie.

18. **Inspection of Gastric Mucous Membrane.**—Souttar *and* Thompson describe their newly invented gastroscope, which consists essentially of a series of short tubes strung together on two narrow steel bands and encased in rubber. On pulling the steel-bands, the instrument can be converted into a *rigid tube*. There is a small electric lamp. The entire stomach wall can be swept with the instrument, about six inches being visible at once. The article is illustrated.

19. **Cutaneous Tenderness.**—Robinson refers to the ten conclusions drawn by Sherren (*Lancet*, 1903, ii, 816) in a paper drawing attention to the frequency of cutaneous tenderness in appendicitis, its distribution, *determination and clinical bearings*. Sherren *believed that information concerning the* appendix could be obtained in this way. Robinson examines Sherren's conclusions in detail, and embodies his own deductions in a series of propositions of which some are a repetition of Sherren's conclusions, and others are not. Robinson's deductions are as follows:

1. In *diseases* of the appendix, or originating there, cutaneous tenderness is sometimes present: most commonly in the skin *innervated from the eleventh dorsal segment of the spinal cord*, but also sometimes in the territory of the ninth, tenth and twelfth, and possibly of the eighth dorsal and first lumbar segments.
2. The areas of such tenderness are most frequently of three main forms described by Mr. Sherren in the *Lancet* of Sept. 19, 1903. But cases are not rare in which the areas are irregular and atypical altogether.
3. A patient displaying an area of superficial tenderness of one of these three defined varieties is, in the *great majority of cases*, suffering from appendicitis.
4. *Nevertheless*, many *other* diseases may resemble appendicitis in this respect: for instance, renal colic, perforated duodenal ulcer, intestinal colic, *perimetritis*.
5. Inflammation of the nerve trunks is not the cause of this symptom, for the latter may occur in skin supplied by the posterior primary divisions of the spinal nerves.
6. There is little evidence as to the immediate cause of this reflex tenderness, but it is probably irritation *of the afferent* nerves from the appendix: the irritant is [illegible] *tension*, in others it is almost certainly [illegible]
7. The symptom is found in a minorit[illegible] appendicitis seen in *hospital practice. It* [illegible] or disappear altogether, while a case is [illegible] ing the progress of an attack it may appear in a patient in whom it has not originally been present.
8. Cutaneous tenderness is found as frequently in subsequent as in first attacks of appendicitis. It *may* persist long after all other signs of the disease have disappeared.
9. The prognostic and therapeutic significance of cutaneous tenderness in cases of appendicitis is slight. It is somewhat less *often found* in *cases* of abscess than in other cases: when the symptom and an abscess coexist, it is usually in an early case.
10. Cases of widespread *peritonitis* set *up by* appendicitis may display large areas of cutaneous tenderness over the right side, or over the whole, of the abdomen.

20. **Endogenous Uric Acid.**—Cathcart, Kennaway and Leathes close an exhaustive paper with the following conclusions:

1. A marked increase in the output of endogenous uric acid has been found to occur in three conditions: (a) fever, (b) exposure to cold, (c) after severe exertions. The increased output coincides and terminates with the febrile rise of temperature, coincides with

and outlasts by many hours the exposure to cold follows the exertions and lasts for many hours after them. It is suggested that in all these three conditions the uric acid has its origin in metabolic processes occurring principally in the voluntary muscles and not immediately related to voluntary contractions and work.

2. The daily tide in uric acid excretion high output in the morning, low output at night, is not due to retention of uric acid formed during the night nor is it due to the fact that the digestive organs are inactive during the night, if that is a fact with the last meal taken at 9 or 10 p. m. as in most of the author's experiments. It is rather due to the quickened activity of all functions especially those of the voluntary muscles which results from the rest of sleep.

3. Generally speaking, the more lively the performance of the functions of the body as a whole, the greater the amount of uric acid produced will tend to be.

21. **Respiratory Movements in Hemiplegia.**—West recalls Hughlings Jackson's description of the peculiar changes of respiratory movements in hemiplegia and his explanation thereof. He then reports a case of right hemiplegia from a clot in the middle cerebral artery occluding the Sylvian artery and the lenticulo-striate artery, which showed a peculiar modification of respiration. As the patient lay in bed on the back, the right, i. e., the paralyzed, side was flatter all over the front than the other, and moved but little on respiration. The difference between the two sides was obvious to the eye and hand in ordinary breathing, and was greatly increased in voluntary breathing. Coughing produced the most extraordinary effect, for while the sound side contracted, the paralyzed side bulged or was blown out. This gave a most curious sensation to the hand laid on the side. The diaphragm moved apparently equally on the two sides, and an *x*-ray examination made the following day seemed to confirm this. By means of an apparatus, the respiratory movements of the sound and the paralyzed sides were recorded synchronously. In ordinary breathing the following peculiarities are observed on the paralyzed side: 1. The respiratory excursion both inspiratory and expiratory, is much diminished, i. e., the height of the wave is reduced. 2. The character of the wave is altered. (a) It is much rounder, (b) it is delayed for the rise may not begin till that on the sound side is three-fourths to five-sixths complete, (c) it is shorter, so that the postexpiratory pause, which hardly exists on the sound side, is very obvious. In voluntary breathing the differences are of the same kind, but exaggerated. (c) On coughing, the curves move in opposite directions, for while on the sound side after somewhat exaggerated inspiration the chest contracts, on the paralyzed side, instead of contracting it is distended by the cough, and the more powerful the cough the greater the distention or bulging. The effect of coughing was very remarkable, and it as well as the change of shape noted on the paralyzed side are suggested by West as new observations.

22. **Malignant Disease of Appendix.**—Elwell describes a case of primary malignant disease of the appendix, and comments on its rarity, its early age incidence, undoubted but undefined relationship with inflammatory conditions, complete dissociation from all gross manifestations of malignant disease, and its histology, which does not allow of its definite classification, but there are not yet sufficient grounds to justify the introduction of any other term than carcinoma.

Indian Medical Gazette, Calcutta.

July.

25. *Incineration in Military Stations. H. Hamilton and H. Raitt.
26. Experiments on Rat Exterminations. R. O. Saigol.

25. **Incineration.**—Hamilton and Raitt describe, with a photographic illustration, the latter's incinerator for burning up animal and human excrement, litter, sweepings, etc., in isolated places and small communities, where the disposal of such matters is a difficult problem. It is intended primarily for military cantonments, but could be cheaply and expeditiously constructed in any outlying district away from the resources of civilization.

Archives des Maladies du Cœur, Paris.

Vol. I, July, No. 7, pp. 401-456.

27. Histologic Modes of Destruction of Blood Corpuscles and Rôle of the Spleen in Production of Blood Pigment. (Modalités histologiques de l'hématolyse.) E. Gauckler.
28. To-and-fro Rhythm of Anemic Souffle at the Base of the Heart. ('Rythme de va-et-vient' du souffle anémique de la base.) L. Gallavardin.
29. *Connection Between Arterial Hypertension, Hypertrophy of the Heart and Hyperplasia of Hypophysis and Suprarenals. J. Parisot.

29. **Hypertension, Hypertrophy of the Heart and Hyperplasia of Hypophysis and Suprarenals.**—Parisot reports a case in which a cardiovascular syndrome (arterial hypertension, hypertrophy of the heart and atheroma) was accompanied by hyperplasia of the suprarenals and hypophysis, while the kidneys were intact. There were also symptoms indicating extremely high tension in the cerebrospinal fluid. Autopsy showed cystic degeneration of the ovaries, thyroid, hypophysis and suprarenals. The patient was a girl of 22, and six months before the serious and fatal symptoms there was amenorrhea and other symptoms of ovarian insufficiency developed, soon followed by the vascular hypertension, cardiac palpitations and rebellious headache. The ovarian lesion was probably primary, the hyperplasia of the hypophysis and suprarenals was probably a secondary process, but the hyperfunctioning seems to have brought on the cardiovascular lesions and symptoms. His recent research has confirmed the blood-pressure raising properties of extract of the hypophysis, the most powerful in this respect after suprarenal extract. The patient died suddenly, after several hours of coma. The urine was constantly normal. During the last few days the temperature rose to 38.5 C. (101 F.), the pulse at times to 160.

Presse Médicale, Paris.

July 18, XVI, No. 58, pp. 457-464.

30. The Lipoids. H. Iscovesco.
31. *Temporary Localization of Injected Drugs. (Nouvelle méthode thérapeutique.) R. de Gaulejac.

July 22, No. 59, pp. 465-472.

32. *Tabes and Surgery. Debove.
33. *Hygiene in China. (L'hygiène urbaine en Chine.) J. J. Matignon.

July 25, No. 60, pp. 473-480.

34. Soluble Ferments. H. Roger.
35. Hysteria and Suggestion. (Revision de l'hystérie.) H. Meige.

31. **Temporary Localization of Injected Drugs.**—A girl of 15 was bitten by a viper in the tip of the middle finger, the finger swelled and became gangrenous below a ring she was wearing on that finger but there was no general intoxication after the first acute but transient symptoms. De Gaulejac ascribes the favorable outcome of the case to the constriction from the ring and confirmed this assumption by experiments on rabbits showing that a venom or toxic drug was comparatively harmless if temporarily localized in the part in which it was injected. Young rabbits injected with a dose of cocain in one hind leg (which was rapidly fatal for the controls) tolerated it without injury if an elastic band was applied above to induce passive hyperemia for two or three hours. Constriction for one hour proved ineffectual. Older rabbits displayed less resistance. These facts not only throw light on Bier's method of therapeutic hyperemia, but they also suggest, he thinks, that a drug can be administered in this way in doses otherwise toxic for the organism. It may be possible by this means to increase the so-called maximal doses of certain drugs without harm, as the temporary localization of the drug may induce exceptional production of antitoxin, or the drug may be incorporated by the leucocytes, which will then yield it up, little by little, without causing intoxication. Temporary localization of the dose of a powerful drug may thus prove an important modification in therapeutics.

32. **Tabes and Surgery.**—Debove asserts that in the presence of a joint, bone or visceral affection of obscure origin, the possibility of tabes must be borne in mind. Tabes once diagnosed, the surgeon should never attempt an operation unless under exceptional circumstances. An operation can only be palliative, for a peripheral operation is unable to cure an affection whose origin is central. Any traumatism, besides, is liable to have an injurious influence on the evolution of the tabes, as he shows by a number of typical examples. In one case, a traumatic injury of the knee was treated by repeated resection and finally exarticulation of the hip. The patient was a man of 42, a druggist, and he now has lightning pains. In another knee affection, resection was followed by development of gastric and laryngeal crises and the patient died four weeks after the operation. The structure of the bones in tabes is so profoundly altered that surgical intervention, he insists, is contraindicated. He also relates some instances of

stomach troubles which were treated by operation, on the assumption of organic stenosis, but nothing of the kind was found, and the symptoms persisted and increased, while other signs of tabes appeared as if aroused by the operation In one case a surgeon was sued for damages for having aggravated the stomach disturbances by a gastroenterostomy for incessant vomiting which had been ascribed to stricture of the pylorus. Other signs of tabes developed afterward, and the gastric crises persisted and increased in intensity Debove mentions some other cases which show that a gastroenterostomy rapidly unites when there is no obstruction at the pylorus. In another case the unrecognized tabetic gastric crises were ascribed to gallstones, and the gall bladder was resected; then a movable kidney was immobilized, but the gastric crises still persist, being even more intense Other cases related refer to intensely painful intestinal and bladder disturbances *in which operative treatment only* whipped up the unsuspected causal tabes. Tabes should, therefore, be a *noli me tangere* for the surgeon, although Debove mentions that Dubar and Leroy reported last year two cases of gastric crises cured by gastroenterostomy.

33. **Hygiene in China.**—Matignon was attached to the French *legation at Pekin for years, and he states that although there* is absolutely no urban hygiene in China, yet the Chinese personally practice hygiene without knowing it. They are temperate, their food is hygienic, they always boil their drinking water, and the climate in northern China is *dry and cold*—not a drop of rain falls from September to May—while the sunshine is that of Africa. He noticed that during the winter and spring in the campaign in Manchuria, chestnut hair bleached to blonde and blonde hair became almost white He adds that when the Chinese once wake to the necessity for urban hygiene they will obtain results more satisfactory than we can show now, and at less expense.

Revue de Médecine, Paris.

July, XXVIII, No. 7, pp. 587-664.

36 Old Doctrines, Useful Errors. (Vieilles doctrines, erreurs utiles) F. J. Collet.
37 *Radium Treatment of Angioma. L. Wickham and Degrais Commenced in No. 6.
38 Use of Greek in Medical Language. (Construction des néologismes.) R Pepin.
39 Experimental Reproduction of Landouzy's Typhobacillosis H Gougerot.

Cancer Research Supplement, pp. 1 58

40 *Etiologic Problem of Cancer Borrel
41 *Precancerous Morbid States (Etats morbides précancereux) P Menetrier.

37. **Radium Treatment of Nevus and Angioma.**—Wickham and Degrais give some colored plates showing the *complete* retrogression of large port-wine vascular nevus on the face in three cases. One patient was a man; after five hours' exposure in the course of nineteen days a large uneven, tuberous nevus on his cheek had vanished, and the skin was normally smooth with the exception of one minute nodule. There was no trace of cicatricial tissue left; the skin was only a little pinker than normal. Another patient was a child with a protruding, pulsating vascular nevus spreading over much of the cheek, ear and neck Except for a slightly pinker tint, the region is now entirely normal. The radium seems to have an *unmistakable* action on angioma. The angiomatous tissue is not destroyed by the radium, but it speedily loses its color and retrogresses, *seemingly melting away* under the influence of the radium rays. The action is pronounced and gratifying on tuberous, erectile, pulsating angioma. Flat or scarcely raised nevi give inconstant results. Sometimes they are all that could be wished, but in other cases unexpected resistance may be encountered and depression and pigmentation may follow the exposures. Nevi on the trunk and limbs have proved less amenable than those on the face. The application of the radium is painless, and no by effects have been observed. The *most convenient form* of application is a disc of metal or cloth on which the radium is embedded in varnish. The applications can be made while the *patient is sleeping.* Six typical cases are related in detail. One week of daily half-hour applications of a 2 cm. disc representing 50.000 units cured a rapidly progressing port wine pulsating nevus on a baby, with nothing to mark the spot except that the skin is still a little pinker than the rest. Their previous *communications on this subject* were summarized in THE JOURNAL, March 7 and 28, 1908, pages 806 and 1084.

40. THE JOURNAL, Aug. 8, 1908, page 514.

41. THE JOURNAL, Aug. 8, 1908, page 514.

Semaine Médicale, Paris.

July 29, XXVIII, No. 31, pp. 361-372

42 *Suburethral Abscess in Women. (Abcès sous-uréthraux chez la femme) F Lejars

42 **Suburethral Abscess.**—Lejars reports a few cases and reviews the literature He insists on the *importance of excising* the wall of the abscess; mere evacuation is not enough. He mentions several points that should be borne in mind when excising the wall to prevent injury of the urethra, etc.

Beitrage zur klinischen Chirurgie, Tübingen.

July, LVIII, No 3, pp. 571 821.

43 Operative Treatment *of Irreducible Forward Dislocation* of Hip Joint (Operative Behandlung irreponibler vorderer Huftluxationen) E Streissler
44 Suture of Arteries *(Arteriennaht)* F *Faykiss*
45 *Spinal Anesthesia and Its By-Effects and After-Effects. (Lumbalanästhesie und ihre Neben- und Nachwirkungen) K Borszeky.
46 Indications for and Results of Suture of the Bladder. (Blasennaht) Renner
47 Rare Dislocations of Shoulder, Pelvis and Hip (Zur Kasuistik seltener Luxationen des Schultergelenks, etc.) Lindenstein
48 Cholesteatoma of Umbilicus. (Cholesteatom des Nabels) H Coenen
49 Primary Carcinoma of Jejunum and Ileum W. Schlieps
50 *Frequency of Necrosis of the Limbs After Ligation of Large Trunk Vessels [illegible] remitatennekrose nach Unterbindung [illegible] E Wolff.
51 Chondrectomy fo [illegible] igidity of the Thorax *(Chondrektomie bei Emphysem infolge starrer Thoraxdilatation)* H. Seidel

45. **Spinal Anesthesia.**—Borszeky reports success in 90 per cent. of 300 cases in which operations were done under spinal *anesthesia In 1.3* per cent. *of the cases the* analgesia was inadequate, and in 8 7 per cent. there was no analgesia. The by-effects *and after effects were at times* so serious that he warns that the method should never be applied outside of a clinic or hospital The main *factors for success are the withdrawal* of exactly the right amount of fluid, very slow injection of the undiluted solution, keeping the patient still *sitting up for two* or three minutes after the injection, and then keeping the head high as the patient reclines. Spinal anesthesia, he says, should be restricted exclusively to operations below the umbilicus for which local anesthesia is not adapted.

50. **Frequency of Gangrene After Ligation of Trunk Vessels.**—Wolff's extensive review of this field of surgical intervention tabulates 2.043 cases of ligation of a main artery or vein or both Necrosis was observed in 233 cases, that is, in 11 4 per cent. The largest proportion of cases occurred in the legs.

Berliner klinische Wochenschrift.

July 27, XLV, No. 30, pp. 1389-1432

52 *Principles of Treatment of *Carcinoma Based* on Action of Antiferments. (Grundzuge einer Antifermentbehandlung des Carcinoms.) J. Hofbauer
53 *Influencing of Malignant Tumors by *Atoxyl* and Foreign Albumin (Beeinflussung bosartiger Geschwulste durch Atoxyl und fremdartiges Eiweiss) A Sticker
54 Negative Results of Injections of Placenta *Blood* in Carcinoma. (Injektionen von Placentarblut bei Carcinom) E Falk
55 Importance of Antitrypsin in Blood (Bedeutung des Antitrypsins im Blute) v Bergmann and Bamberg
56 Treatment of Extreme Obesity. (Entfettung und Entwasserung bei hochgradiger Fettsucht) L Brieger.
57 Fat Splitting Properties of Syphilitic Sera and Importance of Lipolysis for Serodiagnosis of Syphilis. (Fettspaltungsvermogen syphilitischer Sera) J Citron and K. Reicher
58 Treatment of Enlargement of Prostate (Therapie der Prostatahypertrophie) Casper.
59 Importance of Urea Carbonic Acid for Chemistry of Drugs (Allophansaure und ihre Bedeutung fur die Chemie der Heilmittel) M Overlach
60 Dehiscence of Maxillary Sinus. (Dehiscenzen der Kieferhohle) H E Kanasugi

52. **Principles of Antiferment Treatment of Cancer.**—Hofbauer *comments on the constant* presence of lecithin in malignant tumors, and reviews the literature on lecithin, showing its power to activate previously *inert* toxins and ferments. He compares this activating property to that of the spermatozoon on the ovum, and discusses the importance of counter-

acting this activating property displayed by lecithin or abnormal ferments in cancer. He has been experimenting with various ferment-inhibiting means, such as quinin, arsenic, cholesterin and foreign serum. In 20 cases of inoperable cancer the tumors decreased in size in every case under the influence of subcutaneous injection of the antiferment around the tumor or into its depths. In some cases the retrogression was so pronounced that only slight traces of the cancer still remain. The glands in the vicinity also retrogressed with the tumors. He injected twice a week about 25 c.c. of beef serum or about 0.4 c.c. cholesterin (dissolved in alcohol and precipitated with physiologic salt solution); or 0.5 or 0.1 gm. of quinin or 0.3 gm. atoxyl. The beef serum caused a little general reaction.

53. **Influencing of Cancer by Foreign Albumin.**—Sticker relates extensive research along the same lines as reported in the preceding article—both of which issue from Bier's clinic at Berlin. He found that excellent results were obtained in malignant tumors by injection into the periphery of 10 or 15 c.c. of sheep blood (the foreign albumin) followed the next day by an injection of not more than 0.01 gm. of atoxyl, repeated the fourth and sixth day, recommencing the series anew the eighth day with another 10 or 15 c.c. of sheep blood. This simple combination treatment had a favorable effect not only on malignant tumors, but also in cases of enlarged prostate. The beneficial influence was prompt and decided, but it did not prove permanent in any instance.

Deutsche medizinische Wochenschrift, Berlin.

July 23, XXXIV, No. 30, pp. 1297-1336.

61 *Behavior of Cutaneous Tuberculin Reaction During Measles. (Verhalten der kutanen Tuberkulinreaktion während der Masern.) C. v. Pirquet.
62 Mitral Stenosis. P. [illegible]
63 Severe Diabetes Due [illegible] R. Ehrmann.
64 *Operative Treatment of Acute Pancreatitis. L. Bornhaupt.
65 *Rachitis and Scoliosis. E. Kirsch.
66 Universal Favus. Talat.

61. **Suspension of Tuberculin Reaction During Measles.**—Pirquet has found that tuberculous children suffering from measles lose their capacity to react to the cutaneous tuberculin test. He tabulates the findings in 159 cases of measles, 24 in tuberculous children. The reaction became negative after the eruption appeared and then gave positive findings again, commencing the fifth day. He suggests that a positive cutaneous tuberculin reaction can be utilized as testimony against the measles.

64. **Operative Treatment of Acute Pancreatitis.**—Bornhaupt reports the third case of acute pancreatitis in which he operated. The patient was a woman of 42 who has been in the best of health since then. He shows that an early diagnosis of acute pancreatitis is possible by exclusion. In the early stages and in merely partial disease of the gland, the sugar in the urine is an important aid for the diagnosis. Intervention should be as prompt as possible, not only to divert the course of the pancreatic secretion out of the abdominal cavity, but to relieve the congested gland and infiltrated retroperitoneal tissue, and to restore conditions for normal circulation in the pancreas.

65. **School Scoliosis.**—Kirsch has been examining 1,015 school children with reference to scoliosis, distinguishing between the form that can be corrected and "fixed" curvature of the spine. The latter is either congenital or of rachitic origin in nearly every instance. Bachmann found scoliosis in less than 1 per cent. of 8,959 cadavers examined at Breslau, but the German school physicians have found that one in every three children has more or less scoliosis. Evidently the "non-fixed" curvature corrects itself later, while the "fixed" grows worse. Kirsch thinks that the best way to differentiate these forms is to have the child bend the trunk forward with the arms hanging. "Non-fixed" curvature corrects itself in this posture, while the "fixed" becomes more apparent, and torsion is plainly revealed. The important lesson taught by his research is the necessity for detection of rachitic scoliosis in its incipiency, and its appropriate treatment before the child is old enough to enter school. Physicians are too much inclined to postpone proper treatment with the indispensable plaster bed until the child is older, believing that it will outgrow the tendency to curvature. But this is extremely doubtful with rachitic curvature, while the finest results can be counted on if the tendency is corrected in time. The soft torsion-hump of young rachitic children yields readily to appropriate measures applied in time.

Deutsche Zeitschrift für Chirurgie, Leipsic.

July, XCIII, No. 6, pp. 505-587.

67 Pseudofractures of Sesamoid Bones of First Metatarsophalangeal Joint. L. Igelstein.
68 Mechanism of Bursting of Intestine from Abdominal Straining. (Mechanismus der Darmberstung unter der Wirkung der Bauchpresse.) F. Kempf.
69 *Origin of Primary Carcinoma. (Entstehung primärer Carcinome.) O. Wyss.

69. **Origin of Cancer.**—Wyss accepts Ribbert's theory that carcinoma originates in epithelial cells over which the body has lost control and which then proliferate on their own hook at the expense of the body. In this long article he presents an array of evidence to sustain this assumption. In particular, he shows that changes in the subcutaneous tissue or vessels from local arteriosclerosis, interfering with the blood supply, finally shut off the epithelium above from the direct control of the rest of the body. This is shown instructively in Roentgen cancers, the infiltration of the subcutaneous tissue and papillary layer of the corium occluding the capillaries and gradually shutting off the epithelium from the blood supply. As long as the body is capable of responding with lively new formation of vessels, growth of capillaries, the epithelium does not suffer, but with advancing years this property is lost, and the epithelial cells gradually become excluded from the rest of the organism. The epithelial cells always display a peculiar faculty for independent existence, more than any other cells in the body, as in transplanted detached grafts. The details of 36 cancers are tabulated, all showing the infiltration below and the exclusion of the growth from the blood supply.

Medizinische Klinik, Berlin.

July 26, IV, No. 30, pp. 1137-1178.

70 *Importance of Serum Diagnosis of Syphilis in Obstetrics. (Bedeutung der Wassermannschen Luesreaktion für die Geburtshilfe.) E. Opitz.
71 Nervous Disturbances in Heart Action. (Nervöse Störungen der Herztätigkeit.) Winckelmann.
72 *Incandescent Light Baths in Chronic Bronchial Affections. (Anwendung von elektrischen Glühlichtbädern bei chronischen Bronchialerkrankungen.) A. v. Strümpell.
73 Perverted Sense of Smell. (Subjektive Kakosmie.) G. Lennhoff.
74 Treatment of Inoperable Tumors with Radium. (Behandlung inoperabler Geschwülste mit Radium.) A. Selig.
75 *General Pathogeny and Symptomatology of Disturbances in Speech in Children. (Kindliche Sprachstörungen.) F. Kobrak.
76 Tests for Antimeningitis Serum. (Genickstarreserum.) F. Neufeld.

70. **Importance of Serum Diagnosis of Syphilis in Obstetrical Practice.**—Opitz hails the serum diagnosis of syphilis as of the greatest importance in maternities. A negative result proves nothing, but positive findings confirm the assumption of syphilitic infection with almost complete certainty. He has applied the test in 104 cases in the lying-in ward since last March, and obtained a positive response in 10 cases. The course of the cases later confirmed the findings in all but 2, but only 2 of the new-born children of the 10 mothers gave a positive response. The presence of the spirochetes alone is not enough to induce the reaction; other processes are evidently at work which occur less readily in the fetus than in the mother. The advantages of thus being able to differentiate the syphilitic patients and their offspring are obvious. He thinks that no woman should be recommended as a wet-nurse until the serum test has been applied. Negative findings are not absolutely decisive, but give comparative confidence. In the few cases in which the women gave a positive reaction, although apparently free from syphilis, it may be possible that the spirochetes in the fetus elaborated substances which passed into the maternal blood and induced changes such as the spirochetes themselves would have induced. He advised such women of their condition and impressed on them the necessity for prompt treatment at the first indication of symptoms, but he did not institute treatment on the basis of the positive reaction to the serum test

alone. He suggests, in conclusion, that possibly the mere fact of pregnancy may cause changes in the blood similar to those induced by the spirochetes and entail a positive reaction exceptionally in the non-syphilitic.

72. **Electric Light Baths in Chronic Bronchial Affections.**—Strümpell says that Kellogg's incandescent light baths have first made it possible to induce energetic diaphoresis without the slightest inconvenience or annoyance to the patient. He has found this technic of the greatest benefit in chronic bronchitis, especially the dry form, without secretion. He warns expressly that it is suited only for the primary cases, and that they must be carefully differentiated for the purpose. He knows of no other treatment for bronchial asthma which gives such good results as a few weeks of this technic, as his experience has demonstrated in fifteen cases with no recurrences to date. In two other cases only transient benefit was obtained. Any sweating procedures may prove beneficial but the incandescent bath evidently acts not only on the sweat glands, but on others and on the epithelium of the bronchial mucosa. This action may be supplemented by the increased elimination in the sweat and secretions and by the hyperemia induced in the skin and by the influence on the general circulation—all of which help to explain the permanently favorable influence. In conclusion he warns against Roentgen treatment for the present, as it is not yet fully under control and he advises institutional treatment for the incandescent course. Much the best results were obtained in his experience when the patients were under continuous medical oversight and influence.

73. **Defects in Speech.**—Kobrak distinguishes between the two factors in stuttering: the spastic paresis and the ataxia. The primary spastic paresis seems to be more the expression of certain organic focal defects, while the primary ataxia seems to develop more on a purely psychogenic basis. The latter is amenable to psychic and pedagogic measures. The defect in the speech center may be corrected by exercises. Much can be done in prophylaxis. This does not mean that every child with a tendency to stutter should be sent to a special sanatorium—although far the best results are obtained by institutional treatment. The stutterer should be patiently shown again and again how he can control his affection by physiologic exercises of the speech and avoidance of charlatans' methods.

Munchener medizinische Wochenschrift.

July 21, LV, No 29, pp. 1521-1568

77 Improved Polyvalent Antiserum (Eine wesentliche Verbesserung meines Serums.) R Deutschmann
78 *Detection of Scanty Typhoid Bacilli (Verfahren zum Nachweis sparlicher Typhusbazillen.) H Conradi
79 Ultrafiltration of Chicken Cholera Virus (Ultramikroskopische Infektionserreger.) G Giemsa and S Prowazek
80 Hermaphroditism A Hegar
81 Treatment of Acute Coryza. (Behandlung des akuten Schnupfens.) H Lowy
82 Suicide During Childbirth (Zur Kasuistik des Selbstmordes wahrend der Geburt.) K v Sury
83 Measurement and Dosage of Roentgen Rays by Absolute Units (Rontgenolyse.) F Klingelfuss
84 Acute Dilatation of Heart (Zur Frage der akuten Herzuberanstrengung.) Schott.

78 **Technic for Cultivating Scanty Typhoid Bacilli.**—Conradi has studied 300 different dyes in the last three years, seeking to improve the technic for detection of typhoid bacilli. A combination of 1/15,000 picric acid and 1/150,000 brilliant green and peptonized agar with a little meat extract has proved the best technic for cultivating scanty typhoid bacilli, while inhibiting the growth of other germs, thus simplifying agglutination. He describes his experience with this "green plate" technic, which allows differentiation in twenty hours.

Wiener klinische Wochenschrift.

July 23, XXI, No 30 pp. 1079-1108

85 Relations Between Chemical Constitution, Physico Chemical Properties and Pharmacodynamic Action E Fribram
86 Anaphylaxis Produced by Organ Extracts R Kraus, R Doerr and Sohma
87 Laws of Peptic Digestion (Gesetze der peptischen Verdauung.) H. Reichel
88 *Conservative Treatment of Chronic Suppuration Above the Tympanum (Konservative Behandlung chronischer Eiterungen des Epitympanum.) L Mekler.
89 Streptococcus Aggressins in Blood in Puerperal Sepsis. E. Hoke
90 Adrenalin Saline Injections as Adjuvant in Treatment of Exceptionally Severe Diphtheria. (Diphtherietherapie.) D Pospischill Commenced in No 29

88 **Conservative Treatment of Chronic Suppuration Above the Tympanum.**—Mekler reports two cases of obstinate suppuration in which he finally obtained a cure by blowing boric acid into the ear, the patient meanwhile reclining with his head hanging over the edge of a sofa, with the affected side down, the mastoid antrum therefore being at the lowest point. This brought the powder exactly where needed. The patient lay in this position for ten minutes, and the procedure was repeated every day, the result being that the suppuration gradually dried up.

Zentralblatt für Chirurgie, Leipsic.

July 25, XXXV, No. 30, pp 905-936

91 Antiferment Treatment of Suppurative Processes without Incision (Antifermentbehandlung eitriger Prozesse.) H. Kolaczek
92 *Treatment of Burns (Behandlung von Verbrennungen.) L Renner

August 1, No 31, pp 937-960

93 Treatment of General Sepsis and Pyemia (Behandlung septischer und pyamischer Allgemeininfektion.) P Sick
94 Reversed Form of "Madelung's Deformity" De Witt Stetten.

92 **Treatment of Burns.**—Renner reports excellent results in treatment of burns from application of a powder of one part bismuth to two parts kaolin. He has applied it in hundreds of cases during the last few years, and says that it effectually keeps the surface dry, while it prevents infection and allows the dressings to be easily renewed.

Zentralblatt für Gynakologie, Leipsic.

July 25, No 30, pp. 969-1000

95 *"Nerve Nucleus Icterus" of the Newly Born (Kernikterus der Neugeborenen.) P Esch
96 *The "Convoluted" Uterus (Der "schneckenförmige" Uterus.) E M Simons

August 1, No. 31, pp 1001-1032

97 Case of Sclerema in New-born Infant (Sklerema neonatorum.) P. Esch
98 Antiprolapse Pessary (Ein neues Pessar gegen Uterus und Scheidenvorfall.) L Friedmann

95 **Nerve Jaundice of the Newly Born.**—The infant in the case reported by Esch presented general jaundice a few days after birth, early accompanied by tonic convulsions and bulbar symptoms. Several other members of the family had been affected with jaundice, as was noted also in Beneke's two cases. The nuclei of the nerves in certain regions showed intense yellow discoloration. The termination of this "nucleus icterus" has been invariably fatal in the few cases known to date.

96 **"Convoluted" Uterus.**—Simons treats this defective development of the cervix by tents, with or without an incision. He has previously described it as "posthorn kinking" of the cervix, but thinks that Bossi's comparison of it to the convolutions of a seashell is more appropriate. An intrauterine tent usually proves effectual in restoring conditions to normal. Bossi's indications were summarized in these columns July 4, page 88.

Gazzetta degli Ospedali e delle Cliniche, Milan.

July 19, XXIX, No 86, pp 905-920

99 Two Cases of Rupture of Aorta (Rottura dell'aorta.) V. Maragliano
100 Influence of Morphin on Resistance of Red Corpuscles (Influenza della morfina sulle resistenze dei globuli rossi.) G. Bonanno
101 *Experimental Ligation of Abdominal Aorta (Legatura dell'aorta addominale.) F Fiore
102 Leucocyte Formula in Primary Anemia. (Valore semejologico della formola leucocitaria nelle anemie primitive.) M Giacomo
103 Instrument for Intubation (Nuovo intubatore del laringe.) G Belloni.

101. **Ligation of Abdominal Aorta.**—Fiore concludes from his experimental research on dogs that ligation of the abdominal aorta is feasible. The animals all tolerated it without much disturbance when it was done about 4 cm above the bifurcation. He found the transperitoneal route the most convenient. None of the patients recovered in the fourteen cases he reviews from the literature, but he does not think

that the ligation was responsible for the fatal outcome in any instance, and is confident that it has every prospect of success on a young and healthy patient

Policlinico, Rome

July, XV Medical Section No 7, pp 289 336

104 puscles by Various Bacteria itterica) G Guyot
105 Special Regard to Behavior of Leucocytes (Il sangue nell' infezione titosa) A Bucalossi Commenced in No 6

July, Surgical Section No 7, pp 289 328.

106 Case of Muscular Angiomata V Porcile
107 *Primary Sarcoma of Liver (Sarcoma primitivi del fegato) G Bertelli Commenced in No 6
108 Paragastric Appendicitis (Contributo anatomo patologico patogenetico e clinico alle dislocazioni appendicolari) P Frascella

July 26, Practical Section, No 30, pp 933 964

109 *Lowy s Sign of Insufficiency of the Pancreas (Nuovo segno dell insufficienza pancreatica) R G Quadrio

107 **Primary Sarcoma of the Liver**—Bertelli has been studying two cases of primary sarcoma of the liver but was unable to discover any special syndrome for this affection The liver soon attains a large size, while as a rule there is no ascites or jaundice

109 **Lowy's Sign of Insufficiency of the Pancreas**—Lowy found that adrenalin instilled into the conjunctival sac had no appreciable effect on normal animals but induced pronounced dilatation of the pupil in animals whose pancreas had been removed The same effect was obtained in diabetics, while other patients showed no response to the instillation Quadrio reports similar findings in 25 patients, 20 free from any tendency to a pancreatic affection presented no reaction but pronounced mydriasis was observed in the 5 others, and 4 of these had a tumor in the pancreas or were in advanced diabetes, while the fifth was an epileptic The technic is simple—merely instillation of 3 or 4 drops of the suprarenal preparation in the conjunctival sac When the reaction is positive, pronounced mydriasis occurs in a few minutes

Hospitalstidende, Copenhagen.

June 3, LI, No 23, pp 641 688

110 *Operative Treatment of Sciatica (Ischias) A Pers Commenced in No 22

June 10, No 24, pp 689 712

111 Copper Hydroxylamin Test for Grape Sugar (Bangs Metode til Bestemmelse af Druesukker) H Jessen Hansen
112 *Recurring Tuberculous Polyarthritis (Tuberkuløs Ledreumatisme) K Schaffer Commenced in No 23

June 17, No 25, pp 713 744

113 Apparatus for Abdominal Massage (Bugmassageapparat) J C Johansen

June 24, No 26, pp 745 784

114 Sterilization of Metal Instruments M Claudius
115 Iodized and Chromicized Catgut (Jodkromkatgut) Id
116 Improved Technic for Microtomy (Paraffinoid) Id

July 8, No 28, pp 817 848

117 Operations on Kidneys when Catheterization of Ureters is Impossible Six Cases (Nyreoperationer efter svigtende Forsøg med Ureterocystoskopet) H Kaarsberg Commenced in No 27

110 **Simple Operative Treatment of Sciatica**—The Journal summarized, June 16, 1906, page 1894, Pers' earliest communication on the immediate and permanent cure of unusually severe and prolonged sciatica by exposing the nerve and releasing it from a network of adhesions which was binding it down Since then he has applied this simple treatment in 47 cases with good results, as reported in The Journal, August 22, page 715 In his last 18 cases he has followed Bardenheuer's technic for access to the nerve In 6 cases there was a hip joint affection besides, but the patients were relieved of their sciatica He reviews the history of operative treatment of sciatica, adding that he intentionally refrains from stretching the nerve, as releasing it from adhesions has proved all that is necessary

112 **Recurring Tuberculous Polyarthritis**—Schaffer reports the details of thirteen cases which confirm Poncet's assertions in regard to the existence of tuberculous rheumatism, the patients presenting arthralgia, acute and subacute arthritis simulating acute rheumatic fever, or a chronic arthritis similar to various forms of chronic articular rheumatism These affections are probably of toxic nature, but the importance of differentiating their tuberculous origin early is evident, so that no time need be wasted on the salicylates or mercury or antigonorrheal treatment None of the thirteen patients has developed endocarditis since, and in none of the cases had there been a primary angina, so often noticed with true rheumatic fever and there have been no evidences of gonorrhea or syphilis since in any case One patient was a girl of thirteen, being treated for tuberculous glands in the neck Pains developed in different joints with slight fever, but nothing pathologic could be discovered in the joints, although the pains persisted for a month with remissions at times The child has been entirely free since from all tuberculous manifestations and is in good health to date thirteen years later In another group of cases the clinical picture was that of acute rheumatic fever except that the temperature was never very high and the joints not so sensitive, while the general health did not suffer as with rheumatic fever In some other cases the tuberculous arthritis finally localized in one joint and persisted for a long time In one case coxitis had long been preceded by pain in this and other joints One patient had first the arthralgia then scrofulous conjunctivitis, and later tuberculous nephritis This is a striking example of acute polyarthritis as the first manifestation of tuberculosis. Schaffer reviews the entire literature on the subject reiterating that an acute polyarthritis which does not respond to the salicylates is strongly suspicious of tuberculosis A total of 28 cases of joint affections are recorded among the 3,335 tuberculous children admitted during the last 32 years to the Refsnaes Hospital in his charge

Upsala Lakareforenings Forhandlingar.

June 20, XIII, No 5, pp 307 393

118 Infectiousness of Clothes Worn by Consumptives (Infektiositeten hos lungsiktigas kläder) R Pilberger
119 Involution of the Thymus in Rabbits (Thymuskortelns åldersförändringar hos kaninen) G Söderlund and A Backman
120 Enlarged Wandering Spleen with Torsion of the Pedicle Splenectomy (Hypertrofisk vandermjälte med stjälkvridning) A Reuterskiöld and A Vestberg
121 Cholesterin Crystals in Pleural Effusion (Cholesterinkristaller i pleuraexsudat) V Hedesstrom

Supplement, pp 1 504

122 History of Operations for Hernia Remote Results of 655 Herniotomies at Upsala (Radikaloperationer for bråck) S Lindqvist

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Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers

Scientific Memoirs By Officers of the Medical and Sanitary Departments of the Government of India No 32 An Inquiry on Enteric Fever in India Carried Out at the Central Research Institute Kasauli Under the Direction of Lieutenant Colonel D Semple, M D Director of the Institute and Captain E D W. Greig M D Cardboard Pp 108 Price 30c Calcutta Superintendent Government Printing, 1908 No 33 The Production of Alkali in Liquid Media by the Bacillus Pestis By Lieut Colonel W B Bannerman M D B Sc I M S Cardboard Pp 12 Price, 12c Calcutta Superintendent Government Printing No 34 Standards of the Constituents of the Urine and Blood and the Bearing of the Metabolism of Bengalis on the Problems of Nutrition By Captain D B A O I M S, Professor of Physiology, Med Cardboard Pp 67 Price, 30c Calcutt vernment Printing 1908

Cataract Extraction A Series of Papers with Discussion and Comments Read Before the Ophthalmological Section of the New York Academy of Medicine 1907 1908 Edited by J Herbert Claiborne M D Instructor in Ophthalmology Cornell University Medical College Cloth Pp 169 Price, $2 00 New York William Wood & Co 1908

Diseases of the Rectum Anus and Sigmoid Colon By F Swinford Edwards F R C S Surgeon to the West London Hospital Third Edition of Cooper and Edwards s Diseases of the Rectum and Anus Cloth Pp 442 with illustrations Price, $4 20 Philadelphia P Blakiston s Son & Co

The Extra Pharmacopeia Revised by W Harrison Martindale Ph D, F C S, and W Wynn Westcott M B Lond D P H H M s Coroner for North East London Thirteenth Edition Flexible Leather Pp 1,164 Price, $2 75 London H K Lewis, 1908

Industrial and Personal Hygiene By George M Kober, M D, LL D Professor of Hygiene School of Medicine Georgetown University A Report of the Committee on Social Betterment Paper Pp 175 Washington President s Homes Commission, 1908

Medical Greek By Achilles Rose Cloth Pp 262 Price $1 00 New York. Peri Hellados Publication Office

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Original Articles

ARTIFICIAL RESPIRATION IN ITS PHYSIOLOGIC ASPECTS.*

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EDINBURGH.

In order to estimate the value of any method of artificial respiration it is necessary to bear in mind certain general principles and to determine with some approach to accuracy certain statistics.

The most important of the principles concerned is the elasticity of the lungs and thorax, by virtue of which alterations in volume caused by distortion of shape under the influence of an external force are followed, on removal of the distorting force, by a return to the original volume. It is by virtue of this principle that expiration is ordinarily effected, the distorting force usually acting so as to increase the capacity of the thorax by raising the ribs and depressing the diaphragm; on its removal these parts return to their original position. But, artificially, the distorting force can be made to act in an opposite manner, viz., by diminishing the capacity of the thorax and thereby forcing air out of the lungs; on now removing the distorting force the elasticity of the thoracic wall causes air to pass into the lungs and inspiration becomes produced.

The possibility of effecting artificial respiration in this reversed manner, using pressure as the active agent to cause expiration and the elasticity of the thoracic wall to produce inspiration, was demonstrated by Dr. B. Howard of New York, who in 1868 published an account of a method of performing artificial respiration which has since been largely used by physicians and surgeons in threatened death from asphyxia or from administration of anesthetics; this method was introduced by Dr. Howard for employment in cases of drowning. The method consists in laying the patient on his back, kneeling over the lower part of the body, and alternately pressing on the lower part of the chest and relaxing the pressure, repeating the operation eight to ten times a minute. The advantage of the method is that it is simple and that the patient on the operating table is usually in the supine position. The disadvantages are: that the tongue is apt to fall backward and block the pharynx, therefore, needing to be drawn forward; that the ribs in senile subjects are brittle and may be fractured; and that the liver in asphyxia is congested and greatly enlarged and is liable to be ruptured: this is especially the case in drowned subjects.

Another common method of performing artificial respiration—that suggested by Silvester—appears at first sight to be more truly physiologic, since it attempts to imitate natural respiration by raising the ribs and thus increasing the capacity of the thorax. This is effected by forcibly drawing the arms upward toward the head; the muscles passing from the arms to the chest wall, which are attached to the ribs, are thus made to drag the ribs upward. Expiration is effected by lowering the arms and pressing them against the sides of the thorax. At least three persons are needed to operate by this method, one to activate the arms, another to hold the tongue out from the mouth—for the patient is in the supine position—and a third to hold down the trunk and prevent its being bodily moved. Silvester's method was described by him in 1858.

Marshall Hall's method, which was published in 1857, consists in rolling the patient alternately from the lateral to the prone position and pressing on the back between the shoulder blades when in the latter position. Its efficacy was supposed by Marshall Hall to depend on the change of posture, which, by altering the pressure on the chest in the successive positions of the body, alters its capacity; he accordingly termed it the postural method. It has the advantage over the other two methods that the tongue does not require to be drawn out of the mouth by a special operator, and that, in cases of drowning, water and mucus tend naturally to flow out and do not accumulate at the back of the throat, as is the case when the patient is in the supine position.

In 1890 the Royal Medical and Chirurgical Society of London appointed a committee to investigate the efficacy of these and other methods of performing artificial respiration, and of this committee I was made chairman. A large number of experiments were performed on the cadaver, which were mostly futile by reason of the difficulties presented by postmortem rigidity. Subsequently transferring the work to Edinburgh, we made similar investigations on the living passive subject, and also investigated in dogs both the physiologic phenomena presented in drowning and the best means of producing recovery in these animals by artificial respiration. In this research I received the aid of Dr. P. T. Herring of the physiology department of the University of Edinburgh and of my other assistants there.

As the outcome of this work we concluded that, for the performance of artificial respiration without the aid of bellows or other apparatus, a pressure method is best, and that such a method is most efficient with the patient in the prone position and with the pressure applied vertically over the lowest ribs. In this way not only is the thorax compressed, but also the abdomen, against the ground. The pressure on the abdomen forces the viscera against the diaphragm, which is thereby itself moved upward, driving air out of the lungs. On relaxing the pressure the elasticity of the parts causes them to resume their former shape and volume, and air is drawn in through the glottis. The pressure is exerted gradually and slowly, occupying some three seconds: it is then removed during two seconds and again applied; and so on some twelve times a minute. To this method I have given the name of the "prone pressure method." The method is illustrated by the appended cut (Figs. 1 and 2), which are from photographs taken for the Royal Life Saving Society.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

In performing it the operator kneels or squats by the side of or across the patient, places his hands over the lowest ribs and swings his body forward and backward so as to allow his weight alternately to fall vertically on the wrists and to be removed; in this way hardly any muscular exertion is required. The efficiency of a pressure method of artificial respiration depends on the fact that after an ordinary expiration the thorax still contains some 1,500 c.c. of air which can be expelled by a forced expiratory effort; this is the reserve or supplementary air of Hutchinson. It is easy to conceive that one-third of this reserve air, i. e., 500 c.c., can be forced out from the chest by pressure, and, as a matter of fact, considerably more than that amount can be expelled when the pressure is applied in the prone position as just described. By repeating the movements—pressure and relaxation—twelve times a minute, we easily get an air exchange of 6,000 c.c., which is more than the average normal amount.

It is somewhat curious to find that up to the time of our investigations no one seems to have tested the efficacy of the current methods of performing artificial respiration by determining the quantity of air per minute which can be pumped into and out of the lungs. Attempts had been made on the cadaver to test the effect of single inspiratory or expiratory movements, but these all proved of little value, for the reason already given. In any case it is of first importance to know what would be the result of keeping up the efforts of artificial respiration during a given time at the normal rate. To this matter we accordingly directed our attention. To measure the amount of air delivered per minute by the several methods above described we employed a spirometer with counterpoise devised by Marcet, so arranged that when the inner cylinder is raised from the water in the outer cylinder its increasing weight is *pari passu* counterbalanced. A mask was fitted over the mouth and nostrils of the subject (or a mouthpiece was used, the nostrils being closed) and a double set of water valves was so arranged in connection with the mask that the air could pass through one valve into the mask and air passages during inspiration and through the other valve into the spirometer during expiration. In this way not only can the amount of air pumped into and out of the chest in a single respiratory movement be measured, but, what is of more importance, the amount which is pumped in and out in a given time—say, one minute or five minutes.

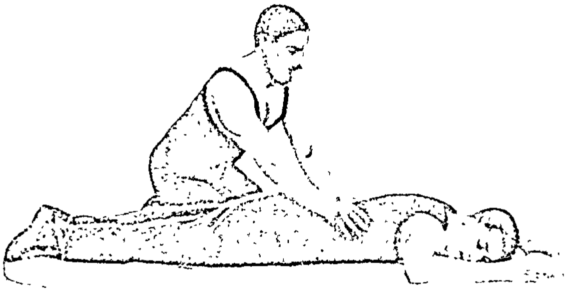

Fig. 1.—First position of operator and patient for effecting artificial respiration by the "prone pressure method" described by Professor Schäfer. The operator's hands are over the lowest ribs of the patient.

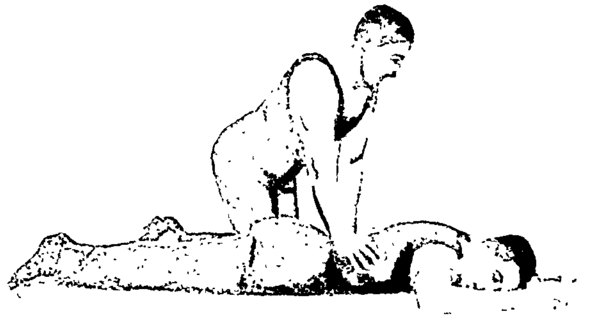

Fig. 2.—Second position of operator, who is throwing his weight vertically on his wrists, thus putting pressure on the thorax and abdomen of the patient. This pressure is exerted slowly, occupying some three seconds and is then removed for a period of two seconds and again applied.

It is known from the experiments of Vierordt that the average amount of air which a man breathes in and out of the lungs per minute is between 5,000 c.c. and 6,000 c.c. If the rate of respiration is twelve per minute, this will give a tidal air volume of nearly 500 c.c. Any method of artificial respiration which fails to provide for an air exchange of less than 5,000 c.c. per minute is therefore less efficient than normal, and a marked deficiency of air exchange should lead us to reject such method. The importance of subjecting all proposed methods of artificial respiration to this test is obvious.

The following figures represent the results of one of a series of comparative experiments made to test the efficacy of the Silvester, Howard, Marshall Hall, and prone pressure methods as compared with natural respiration. Both the subject and operator were the same throughout. In the first place the amount yielded by natural respiration was determined. The rate of respiration was thirteen per minute; the amount of air exchange per minute was 5,850 c.c.; the amount of tidal air works out therefore to 450 c.c. Pumping by the Silvester method at the rate of the natural respiration of the same individual, the amount of air exchange per minute was 2,280 c.c., giving a tidal air amount of only 175 c.c., which we recognize as quite inadequate.

With the Marshall Hall method the results are similar; an exchange per minute of 3,300 c.c. is registered, giving a tidal air volume of 254 c.c.; also inadequate. With the Howard method the results approach more nearly to the normal; the exchange per minute is 4,030 c.c. and the tidal air volume is therefore 310 c.c., i. e., some two-thirds of what was determined to be the natural amount of exchange in the individual who was the subject of the experiment. On the other hand, by the prone pressure method the amount pumped through the lungs per minute was 6,760 c.c., giving a tidal air volume of 520 c.c. That is to say, this method proves to be completely efficacious and capable of effecting an air exchange greater than that produced in normal respiration.[1]

In cases of drowning there can be no question that the prone pressure method of artificial respiration is always indicated. Its advantages are: 1, That it is fully efficient; 2, that it can be performed without fatigue by a single individual; 3, that it is simple and easily learned; 4, that it allows the tongue to fall forward and the mucus and water to escape from the mouth so that the tendency of these to block the passage of air, which is inherent to the supine position, is altogether obviated. It can be applied equally well in attempting to revive a patient whose respiration has ceased in consequence of an overdose of chloroform or other anesthetic. One of the difficulties and dangers of a general anesthetic is the excessive secretion of saliva and mucus. This, with the subject in the prone position, would tend to flow out of the mouth. With chloroform another source of danger is the tendency of the heart to undergo fatal inhibition, owing to the influence of the drug on the vagus center. Both these dangers are obviated by the hypodermic administration, prior to the operation, of a small dose (1/50 grain) of atropin sulphate. It seems strange that anesthetists do not generally adopt this simple precaution as a routine method. They would thereby be saved much anxiety, and the paragraphs in the newspapers headed "Death During Administration of an Anesthetic" would be much more rare than they are at present.

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[1] The efficacy of the prone pressure method was demonstrated to the Section by measuring the amount of air which could be exchanged in a given time as compared with that exchanged by natural respiration.

I have spoken hitherto of methods of artificial respiration which do not require the use of apparatus. Such methods are the only ones which are usually available in cases of drowning, and of these the prone pressure method is certainly as efficacious as any method which involves apparatus. Circumstances, however, may and do arise in surgery in which artificial respiration is called for but which would not permit of the employment either of this or of the other methods above described. In these cases the simplest apparatus which can be employed is an ordinary bellows or a piston cylinder. It is not even necessary to introduce the air directly into the trachea, for, as Horvath observed, if the nozzle of a bellows is introduced into one nostril, the other nostril being left open but the mouth kept shut, it is possible by a vigorous movement of the bellows to distend the lungs quite efficiently, and, by repeating the movement regularly, to carry on artificial respiration. In dogs I have repeatedly obtained recovery after drowning by the employment of this method, in spite of the much greater intricacy and narrowness of the nasal passages in these animals. But in surgical operations which involve the opening of both sides of the chest it would be safer to perform intubation of the larynx, or even temporary tracheotomy. In any case it is highly desirable in such circumstances to adopt, if possible, the prone position for the patient. Under some circumstances a tendency to dyspnea is increased by the supine position. This is the case in dogs with artificial pneumothorax and appears to depend on the position assumed by the heart. Dr. Elsberg recently showed me, at the Rockefeller Institute in New York, an experiment which illustrates this in a striking manner. An animal with a single pneumothorax, which was highly dyspneic when on its back, passed into natural and quiet respiration as soon as it was turned over onto its belly.

Whether for certain surgical procedures it is necessary to carry on artificial respiration by enclosing the body of the patient along with the operators in a chamber within which the air is rarified, it is no part of my function in opening this symposium to consider. We shall doubtless be made acquainted by Professor Sauerbruch with his reasons for adopting this relatively complex method in preference to the simpler positive pressure method which is adopted in physiologic laboratories for similar operations. But there must obviously be a sufficient air exchange whether this be furnished by rhythmic fluctuations in the air pressure of the chamber, permitting the lungs to draw in or drive out air from their cavities, or by a steady stream of air or oxygen passed into and out of the air passages. If this exchange is carried out there is no reason why a method in which respiration depends on the production of expansion of the lung by negative pressure outside it should not be as efficacious as one which depends on positive pressure applied through the air passages. The principle is, in fact, really the same in both cases and in the Sauerbruch chamber, as in natural respiration, it is actually the positive pressure of the atmosphere which produces the lung expansion; the difference between the two methods being that, in the one, pressure on the inside of the alveoli is increased by the action of the bellows, while in the other the pressure on the outside of the alveoli is decreased by the action of the exhaust pump.

ARTIFICIAL INTRAPULMONARY POSITIVE PRESSURE.

EXPERIMENTAL APPLICATIONS IN SURGERY OF THE LUNGS.*

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The ingenuity of Professor Sauerbruch in conceiving the use of negative pressure to prevent collapse of the lung and in constructing his cabinet can not be denied. The size and cost of such an apparatus, however, together with its lack of portability, justifies, I think, investigation and experimentation to obviate the difficulties which have been associated with the use of positive pressure. For we must admit that some simple inexpensive positive pressure device would be more practicable for general use.

My investigations have been exclusively in animal experimentation under the positive pressure method. The objects have been, first, to apply a practical surgical test in animals; second, to refute if possible certain well-known objections to the method; and, third, to improve the application of air compression in order better to maintain ventilation of the lungs and consequent oxygenation of the blood.

The method which I have employed is not the rhythmical inflation method but the use of a steady air compression by the method of Brauer. I first performed thirty thoracic operations on dogs. Wide opening of the right chest was established in all of these cases for periods varying from two to four hours. The air compression was introduced through the apparatus shown in the lantern slides (Figs. 1 and 2). A simple glass face mask was used. Several simple thoracotomies were done with wide openings, and the remainder of the operations consisted in the removal of greater or less portions of the right lung. Of nine deaths in these thirty cases sepsis and the incomplete closure of the lung stump or thorax opening were the chief causes of death. None of the fatalities could justly be attributed to the use of positive pressure. The animals withstood the administration of compressed air without manifesting unfavorable symptoms during the operation, and in the two months' convalescence of the recovered cases no symptoms developed which could be attributed to the use of air compression.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

Dr. Sauerbruch, in a paper of 1904, raised as an objection to my method the fear of "interstitial emphysema as a result of the artificial inpumping of air." But here I would emphasize that under regulated introduction of compressed air the sudden blowing up of the collapsed alveoli, such as occurs in rhythmical inflation, is not an existing danger. The air compression must be regarded as a constant factor. Its passage in and out of the lungs should be obstructed only enough to maintain the lung in a state of inflation a trifle below that which is normal to it. If then the lung is never allowed to become collapsed and then suddenly blown up, and if the outer surface of the lung is never hyperinflated beyond the level of the inner thoracic wall, we have no reason to expect a rupture of the alveoli. In fact interstitial emphysema was not found present in any one of the fatalities or recoveries in this series of thirty operations.

We have been told that in the use of positive pressure dangerous changes in the circulation must occur. This objection led me to perform twenty-five blood-pressure experiments. Dogs exclusively were used. Ether anesthesia was employed without previous morphin injection. In twenty of these experiments aortic pressure was recorded from the left carotid. One or both chests were held wide open with rib-spreaders, and in five cases the entire front of the thorax was removed. The air compression was carefully regulated and all exciting traumatic nerve stimulation, such as traction on the lung or undue irritation of the pleura, was avoided as far as possible.

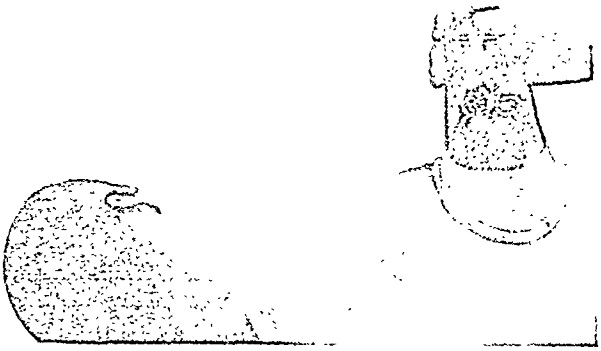

Fig. 1.—During the removal of a positive pressure apparatus from the face, head, or pharynx, in case of vomiting or ether spasm, the application of a thorax cup as shown converts an open pneumothorax into a closed one and the normal physiologic conditions are more nearly maintained. This cup should be applied at the end of expiration, and thus at inspiration a partial negative intrathoracic pressure is produced. No suction need be applied to cup.

The aortic pressure in these experiments maintained a normal level and the heart action was not disturbed. But inasmuch as changes in the pulmonary circulation might be present and not manifest in the aortic tracing, the pulmonary pressure was also recorded in ten experiments. In six of these the right ventricular pressure was obtained through a glass sound passed through the right jugular vein entering the tricuspid valve. In two experiments pulmonary pressure was obtained directly from the branch to the left lower lobe, and in two instances both methods were used synchronously.

These pulmonary tracings likewise demonstrated that under regulated ventilation changes in blood pressure did not occur. If, however, the air compression was employed several minutes previous to the opening of the chest, a rise in blood pressure occurred which immediately fell to the normal level at the moment of opening. Moreover, if after the opening of the chest the positive pressure was allowed to exceed the limit necessary to overcome the elasticity of the lungs and to preserve oxygenation, changes in aortic and pulmonary pressure were manifest. Lowering the air pressure below the normal limits would cause a fall in blood pressure because of the dyspneic effect of insufficient lung ventilation.

From this series of experiments I conclude that in the presence of wide-open pneumothorax, under properly-adjusted air compression, changes in aortic and pulmonary blood pressure do not occur. Furthermore, in the absence of change in pulmonary pressure I am further persuaded to agree with Professor Brauer that the intra-alveolar tension is no greater when produced by positive inflation than when caused by negative suction applied to the outer surface of the lung.

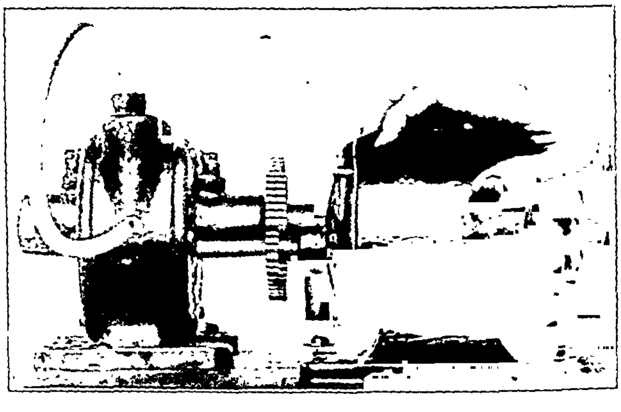

Fig. 2.—This rotary air pump run by a 1/6 horse-power motor supplies a steady air compression with ample cubical volume of afferent air. Its work can be regulated by adjusting the speed of the motor. The use of tanks is thus avoided and it is in other respects preferable to any of the forms of hand or motor bicycle pumps. Its portability is of advantage.

Some observers who have seen Professor Brauer's head chamber clinically applied in surgery of the human, state that cyanosis and dyspnea have been conspicuous factors. In such instances one or two avoidable conditions are present. If unnecessarily high pressure is employed, under-compression of the pulmonary capillaries ensues, the right heart may become engorged and a rise in pulmonary pressure occurs. This should not occur, however, except in the hands of unskilled operators. The more frequent cause of dyspnea in these cases is incomplete ventilation of the lung alveoli due sometimes to the insufficient supply of oxygen, but more often to the stagnation of carbon dioxid, the escape of which is not adequately provided for either in the construction of the apparatus or in its manipulation.

When double wide-open pneumothorax exists, the respiratory excursion of the lung is practically *nil*, with the exception of the slight expiratory effect in the rise of the diaphragm. In other words, the alveoli become dead spaces held in a given degree of steady inflation by air compression. The exchange of gases in these alveolar spaces is essential but difficult in the absence of the help of the thoracic excursion. A limited dead space is, as has been stated by Yandell Henderson, essential for the retention of the required amount of carbon dioxid.

My experience has been, however, that in the use of a positive pressure apparatus the tendency is to the over-retention of CO_2 from an excessive dead space resulting in excess of CO_2, slowing of the pulse and dyspneic respiration, rather than a tendency to lack of CO_2 (acapnia), cardiac tetanus, and apnea, described by Henderson as the symptoms of hyperventilation.

I have done six experiments by the method of Volhard and Sollman introducing oxygen by catheter through a tracheotomy wound to the bifurcation of the bronchi, with both chests wide open and lungs collapsed.

The alveoli of a two-thirds collapsed lung can thus be ventilated and the animal kept alive. Not only is a direct access of oxygen to the partially collapsed alveoli thus established, but a ready escape and flushing out of carbon dioxid is also provided through the tracheotomy wound around the catheter. In one of two attempts I found it possible to maintain oxygenation by similarly introducing air and ether mixture by tracheal catheter, with both chests opened and both lungs collapsed.

The secret of the success of these tracheal experiments with semi-collapsed lungs is the absolute prevention of a dead space for carbon dioxid retention. In order to avoid tracheotomy and introduce air by the mouth, the lungs must be kept inflated by resisting the outflow of the air compression. The aërating surface is thus increased and the ventilating air is kept in motion as in the tracheal experiments.

I have also observed that when the lungs are held in expansion by a strong resistance to the escape, together with a low supply of air compression, that dyspneic signs of incomplete ventilation come on, and from these observations I have been led to attempt every possible means of improving the gas exchange in the alveoli, and thus preventing an absolute dead space. I have, therefore, increased the pressure and rapidity of flow of the afferent "fresh air" by using higher compression, up to about three pounds, yielding a cubic foot of air each minute.

The resistance to the efferent air I have correspondingly diminished so that the lung inflation has remained at its original level. This profuse flushing out of the alveoli is, therefore, a principle which I recommend to prevent the over-accumulation of carbon dioxid, and since its employment I have seen no tendency to dyspnea or cyanosis.

SUMMARY.

The results of thirty operations under positive pressure with 70 per cent. recoveries were encouraging.

Thirty operations and twenty-five experiments proved that emphysema and circulatory changes do not occur with a properly regulated apparatus.

In the use of positive pressure the escape of deoxygenated air must be amply provided for.

I would express my thanks to Prof. Walter B. Cannon for valuable suggestions in the blood-pressure experiments; and to George Adams Leland, Jr. (Harvard Medical School, Class of 1911), for his able assistance.

THE POSITIVE PRESSURE METHOD OF ARTIFICIAL RESPIRATION

WITH ITS EXPERIMENTAL APPLICATION TO THE SURGERY OF THE THORACIC ESOPHAGUS.[*]

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AND

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It is not the intention in this paper to go over the history or to cover the literature of artificial respiration. There are two distinct procedures included in the term. The first applies to postural methods, the second applies to that produced by apparatus. The latter is used in the surgery of the chest. This may again be divided into the positive pressure and the negative pressure methods. It makes little difference which of these is employed. It is in accordance with obvious surgical principles to apply the most expedient.

Matas,[1] Brauer,[2] Tuffier,[3] F. T. Murphy,[4] H. H. Janeway and others have employed positive pressure. Sauerbruch[5] has been the chief advocate of negative pressure. Woillez,[6] in 1876, also employed a negative-

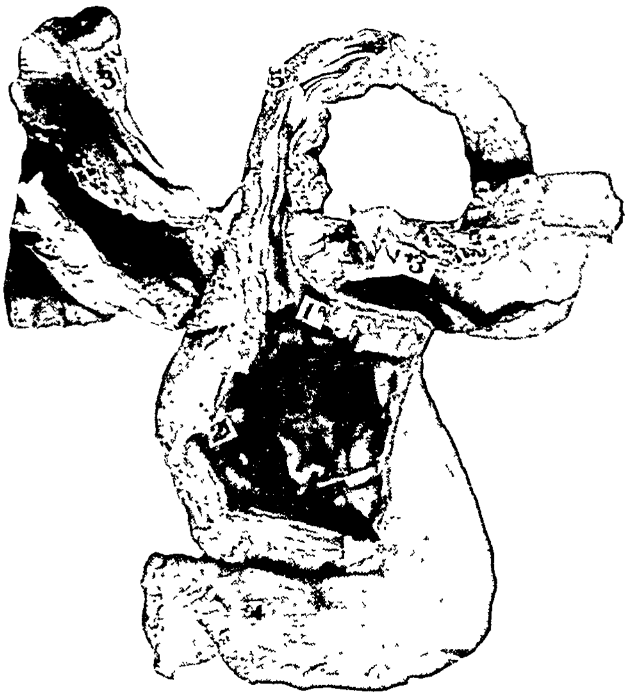

Fig. 1. Result of sectioning operation using silk sutures to make the anastomosis: 1, point of anastomosis which was sequestrated *in the abdominal cavity below diaphragm* 3; 2, the normal esophago-gastric opening closed with silk sutures.

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[*] Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908

[1] Matas, R.: Tr. South. Surg. and Gynec. Assn., xii, 52-82; *Artificial Respiration by Direct Intra-Laryngeal Intubation*, Am. Med., Jan. 18, 1902.

[2] Brauer, L.: Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1904, xiii, 496

[3] Tuffier, T.: l'Ouverture de la plèvre sans pneumothorax, Presse méd., Jan. 27, 1906.

[4] Boston Med. and Surg. Jour., April 13, 1905, clii, No. 15, pp. 428-431.

[5] Sauerbruch, F.: Mitt a d. Grenzgeb. d. Med. u. Chir., 1904, xiii, 400-480; *Munchen. med. Wchnschr.*, Jan. 2, 1906; Zentrlbl. f. Chir., 1905, xxxii, 82; Beitr. z. klin. Chir., 1905, xlvi, 405-494. Stetten, DeWitt: The Experiments of Sauerbruch in the Field of Esophageal Surgery, New York Med. Jour., June 10, 1905.

[6] Bull. de l'Acad. de méd., series 2, 1876, v., 613.

pressure box. Its application was, however, different from that of the Sauerbruch chamber.

As the technic of intrathoracic work shall improve, and as the underlying difficulties shall be more thoroughly understood, artificial respiration as an aid will become more general. The possibility of intervention in thoracic visceral disease has been made clear by Tuffier, Maffei[7] and others. Dr. Sauerbruch's classic work has given a new impetus to the interest in surgical intervention in the chest.

There are difficulties in the surgery of the chest that are not present elsewhere. The chest is a more or less rigid cavity in which the viscera lie deeply anchored. The condition of negative pressure exists. The walls remain rigidly outstanding after either partial collapse of the lung or the removal of part of the enclosed viscera. This latter causes a failure of the viscera to fill the chest at once completely after it has been opened.

There is an apparent tardiness in the serous membranes of the chest to form rapid and plastic adhesions as compared with the peritoneum. Whether this is real or only due to the other conditions within the thorax has not yet been worked out. As to the fibrous adhesions, it is well known that they may be very extensive. In other words, speaking surgically rather than histologically, there are two degrees of adhesions: the first is the plastic form, the second is the fibrous or organized. The rapid development of the first-mentioned is the element which makes a large part of the intra-abdominal work possible. The rate of formation of plastic adhesions within the chest is apparently slower. There is a marked susceptibility of the pleural cavity to infection.

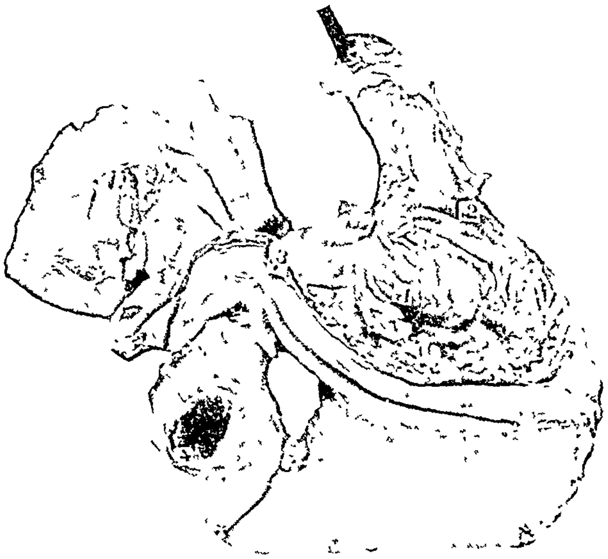

Fig 2. Side-tracking operation by means of a Murphy button: 1, is on the edge of the normal esophageal opening, 2, is on the edge of the new stoma; 3, is the diaphragm; 4, is the Murphy button impacted in the pyloric end of the stomach, causing death two weeks after operation.

After operations in the chest, as elsewhere, septic manifestations may occur. When these have once occurred, it is very hard to establish drainage. This has been our experience in the Research Laboratory. Infection, when present on one side, may rapidly involve the other. We have found in dogs that opening one side of the chest usually means collapse of the lung on the other side as well, unless the lungs are kept inflated by some artificial means, and frequently we have found a communication of one pleural cavity with that of the opposite side. Prof. George S. Huntington regards these openings as artifacts. Furthermore, even if not patent, the mediastinum in dogs is very thin and easily movable, and does not offer the resistance to atmospheric pressure, when one side is opened, that is found in the human being. On this account it would seem that operations for certain conditions in the human subject will prove more successful than the same class of operations for experimental purposes in dogs. This may seem an extraordinary statement, as it is the popular belief that dogs are more resistant to septic infection than are human beings. Our researches, however, have shown that dogs are not as resistant to infection as is commonly believed. In operations in the chest we may get infection from the skin, the severed bronchial tubes, or the opened hollow viscera. Operations on the lungs appear to be less frequently followed by empyema than operations on the alimentary canal. In work on the lungs it is important to have all the cut ends of the bronchial tubes closed in to prevent it. Any method that accomplishes this well should succeed. In a recent article by Samuel Robinson,[8] of Boston, very good results have been reported. In a previous paper,[9] one of us has outlined a technic for the prevention of sepsis from the bronchi. In work on the esophagus, sepsis more frequently follows, unless special points in technic applicable to the chest are carefully observed. Whether this is due to the aspirating of air down the esophagus

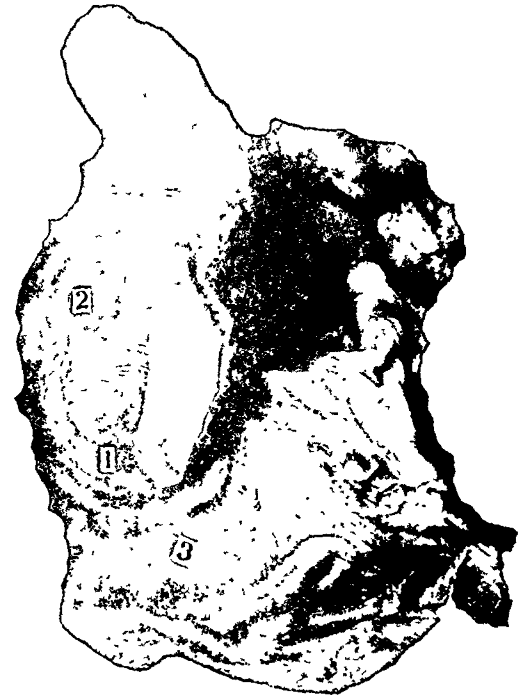

Fig. 3. Side tracking operation by means of a Murphy button containing an obturator in the male portion: 1, normal esophageal opening into stomach: 2, new stoma; 3, diaphragm. (It must be understood that in these operations the cardiac portion of the stomach was drawn up through the diaphragm into the chest and became thereafter an adventitious thoracic viscus.)

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[7] Jour. de Chir. et Annal. de la Soc. belge de Chir., 1906, vi, 380-390.

[8] Ann. Surg., February, 1908, xlvii, No. 2.

[9] Green, N. W.: Surg., Gynec. and Obst., May, 1906, ii, No. 5, 512-538.

while it is opened, thus contaminating the field of operation, or whether it is due to subsequent leakage from some *mechanically imperfect closure is hard* to determine. It may be from both. H. H. Janeway has suggested that it may, in some degree, be due to the suction of the negative pressure aiding intra-thoracic seepage along the stitches, or retrograde leakage between them.

Dr. Sauerbruch has had very favorable results with the aid of some mechanical device such as the Murphy button. We think that this is due to a more perfect closure of the anastomosis wound and of the lymphatics than can be made by stitches, for when properly applied it makes a tight apposition of the visceral surfaces.

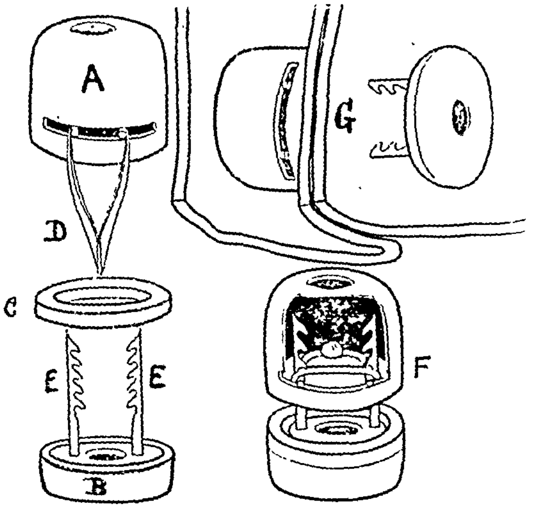

Fig. 4. Special button for esophago-gastric anastomosis (side-tracking operation); A, gastric half of button; B, esophageal half; C, floating ring (elastic) for maintaining continuous pressure on tissues (this is made now as a spring ring); D, forceps for releasing spring which engages needles, E, E; F, complete button partially closed: G, *method of uniting halves of button by* perforating walls of esophagus and stomach by the needles (the portion of the walls thus included between the halves of the button undergoes necrosis from pressure and sloughs out in a few days). The new stoma shown in Fig. 6 is the result of such a process.

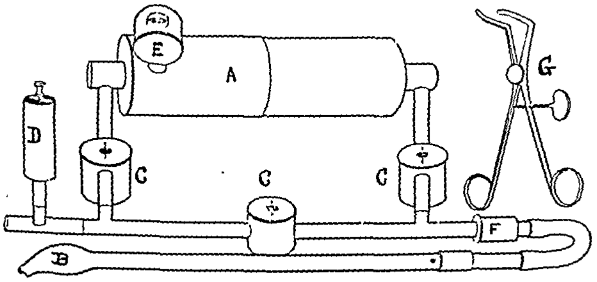

Fig. 5. Apparatus for applying positive pressure in artificial *respiration*; A, *ether chamber filled with gauze*; B, intubation tube; C, C, C, valves used to direct current of air either through ether-chamber or directly to intubation canula; D, safety valve; E, inlet for fresh ether; F, air-filter; G, clamp for holding tube in place.

This, unlike the union made by stitches, is an uninterrupted pressure circle. That made by stitches, on the other hand, even if they be continuous, must have points of varying pressure throughout its circumference. These theoretical points have been suggested to us by the difference in mortality in practically comparing the two methods. Our own experience leads us to believe that some mechanical device which will establish an anastomosis with absolutely no soiling of the serous membrane, forming at the same time a tight joint, will prove of the greatest assistance in rendering operations of this nature free from disastrous infection. Dead *spaces within the chest should be overcome as much as* possible, at the termination of the operation by increased air pressure. The absence of omentum with its coapting power is an unfavorable feature which may hinder success. We *have carried omentum into the chest and* applied it to the wound in one instance. The constant motion of the diaphragm may be a factor which militates against proper union after operation. We have stretched the diaphragm on the operated side, and also interrupted the function of the phrenic nerve in an effort to overcome this.

The difficulty of establishing drainage may, in part, be overcome in the human by some sort of aspirating device.[10] In our experimental work on dogs this is hardly applicable.

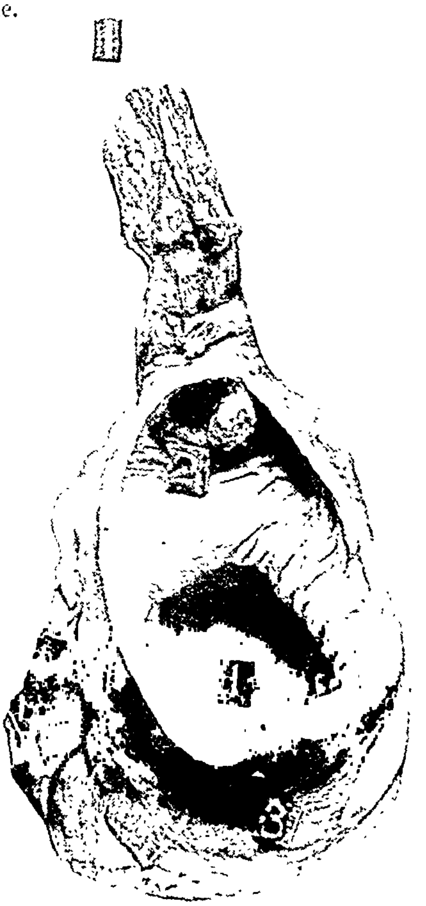

Fig. 6. Stomach removed from dog ten days after operation: 1, 1, glass rod passing through esophagus and normal cardiac orifice of stomach; 2, new stoma made by button shown in Fig. 4; 3, diaphragm.

The indications for operation on the esophagus are: stricture of the esophagus, *carcinoma of the lower end* or of the esophago-gastric juncture, diverticulum of the esophagus, and foreign bodies within the esophagus.

The operations that we have undertaken in the Surgical Research Laboratory on the esophagus may be classified under two types. In one, the esophagus was sectioned, reuniting the proximal end with the cardia of the stomach (Fig. 1). In the other, there was a side-tracking of the cardiac orifice similar to the method of Biondi.[11] The sectioning operation was done with the aid of sutures and of the Murphy button. The results have not been encouraging. The greater amount of traumatism and the more protracted duration, together with the difficulty of making a perfect closure, have limited our success. The side-tracking method has been accomplished with the aid of the twine triangular stitch elaborated in this laboratory,[12] and with the aid of the Murphy button (Figs. 2 and 3). We have also made use of a special button (Fig. 4) designed (by N. W. G.) with the idea of causing an anastomosis with no further opening of the viscera at the time of operation than two needle-like punctures made after the serous surfaces have been coapted.

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[10] Seidel, H.: Deutsch. med. Wchnschr., Feb. 22, 1906. Bryant, J. D.: Surg., Gynec. and Obst., 1906, iii, 296-302.

[11] Gosset, A.: Rev. de Chir., 1903, xxviii, 691.

We have used during these procedures an apparatus for artificial respiration described in previous communications.[13]

It may be well here to present a diagram of it (Fig. 5). Ether has always been the anesthetic used. The loss of body heat was always considerable but this, in part, has been overcome by warming the ether vapor before sending it into the air-passages.

It may be of interest here to describe in detail one type of procedure which has seemed to us particularly satisfactory. The animal was first placed under ether and the intralaryngeal canula inserted and held in place by a clamp pinching the tube just oral to the hyoid bone. Through the mouth were introduced first into the stomach and then into the esophagus the halves of the button shown in the diagram. The esophageal portion, being the one with the needles attached, was introduced and guarded by a long alligator jaw forceps. This was left in place while the chest was opened at the level of the eighth rib on the left side. The eighth rib was removed, stripping from it its periosteum, as suggested by Janeway. This gives a much better opening than the intercostal incision and makes it far easier to close the chest at the completion of the operation. The amount of air introduced was regulated by direct inspection of the lung. The seventh and ninth ribs were pressed apart by a self-retaining retractor and care was taken to protect the wound from contamination by a suitable covering. The diaphragm was opened in its tendinous aponeurosis, and the cardiac portion of the stomach drawn up through the opening into the chest and sutured in place to the edges of the diaphragmatic wound. This suture was a continuous one and several reefing stitches were taken in the stomach to one in the diaphragm. This close stitching of the stomach was found to be necessary on account of the tendency of the abdominal viscera to cause fatal prolapse into the chest. We were careful not to include the blood vessels of the stomach in our sutures. Feeling through the stomach wall, we grasped the first portion of the button, previously introduced, and drew it through the new diaphragmatic opening into this cul-de-sac. The forceps were then removed from the esophageal half, the surfaces of the stomach and esophagus brought in apposition and the two halves of the button pressed tightly together. They were held by the spring which engages the serrations at the side of the needles. This completed the intrathoracic part. The chest wall was then closed in layers. The operation here described consumed fifty-five minutes. At the end of ten days the dog was given a lethal dose of ether. The stoma shown in the photograph was found present (Fig. 6).

We wish to express our appreciation to Mr. Arthur G. Sullivan for his assistance, to Drs. H. H. Janeway and N. B. Leggett for many valuable suggestions and to Dr. Robert M. Brown for his skillful mounting of the specimens.

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PRESENT STATUS OF SURGERY OF THE THORAX

AND THE VALUE OF THE SAUERBRUCH NEGATIVE PRESSURE PROCEDURE IN THE PREVENTION OF PNEUMOTHORAX.*

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When I was accorded the honor of an invitation to deliver an address before the Section on Surgery and Anatomy, of the American Medical Association, it occurred to me that it would be a suitable opportunity to present the modern methods employed for opening the thoracic cavity and to give you the results of many personal experiences obtained during the past four years in the use of my pneumatic cabinet. The inefficiency of the methods in vogue up to that time prompted me at the solicitation of my then chief, von Mikulicz, to endeavor to devise a method of operation which would obviate the dangers incident to thoracic surgery. I began by analyzing the methods used to prevent the occurrence of pneumothorax, especially the method of artificial respiration which had been used extensively and successfully in animal experiments for more than a hundred years, and, more recently, in an improved manner, by Matas and several others in the human being. I soon became convinced that this method possessed too many disadvantages ever to become practical. That led me to experiment with negative pressure, basing my work on the known principles of the difference between the intrabronchial pressure and the pressure at the surface of the pleura, about 7 to 8 mm. Hg, which serves to keep the lungs distended. If the normal relationship between these pressures is disturbed, as by opening the thorax, the lungs collapse and the result is a pneumothorax, which may be followed by serious disturbances, such as dyspnea, displacement of the diaphragm and heart, vagus reflexes, etc. Believing that these complications would not occur if the normal relationship of these pressures could be maintained, I was led to carry out the following experiments. The ends of a glass cylinder were sealed with gutta percha paper. One end was perforated by three openings, two small ones, and one large one, the opposite end was perforated by a single large opening. The animal was placed in the cylinder, so that the head protruded from one of the large openings, and the legs and lower part of the body through the other opening. I passed my hands in through the small openings, endeavoring to keep the cylinder air-tight. Next, the cylinder was exhausted sufficiently to reduce the air pressure 10 mm. Hg, then I opened the thorax—and the lungs did not collapse, nor was the respiration disturbed in any way. This primitive apparatus was replaced by a better and a larger one, and then by a small operating room, in which I performed a number of intrathoracic operations, such as resection of the lung and esophagus and operations on the heart, and always with the same result, total absence of pneumothorax.

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[12] Maury, J. W. Draper: Studies from the Laboratory for Surgical Research, Columbia University, 1907, i.

[13] Green, N. W., and Maury, J. W. Draper: Ann. Surg., Oct., 1907, xlvi, 544-548.

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

The result of these experiments was the building of an operating room for practical use. The first operation done in it (resection of esophagus) proved positively that the results obtained in animal experimentation could be duplicated in the case of the human being—that pneumothorax could be prevented.

Soon afterward Brauer published results obtained with a modification of my procedure, the so-called plus or positive pressure, which has not as wide a range of applicability as has my method, although the improvements that have been made in the apparatus used by Brauer have also increased the advantages of the method.

Having established the correctness of the principle of my method, it became necessary to elaborate the operative technic, by no means a small task. Von Mikulicz, Kuettner, Meyer, Tiegel, Seidel, and Freidrich participated in this work, and the result has been eminently satisfactory. Definite rules have been laid down for certain operations, which I will endeavor to explain to you. So far as the anesthetic is concerned, it is remarkable how small a quantity is necessary to produce complete anesthesia, and then only at the time of opening and closing the thoracic cavity. During the remaining steps of the operation very little of the anesthetic is required. It has been shown that it is unwise to reduce the pressure more than 7 to 8 mm. Hg, and Friedrich has had excellent results with a negative pressure of 3 to 5 mm.; in fact, such a minimum reduction should always be employed during intrathoracic operations, as on the esophagus or lungs, or when it becomes necessary to expose the mediastinum. Before concluding the operation, however, it is essential to raise the pressure to 7 or 8 mm. Hg, so that the lungs may become fully expanded, filling the chest cavity completely. Needless to say, the strictest asepsis must be observed, as in abdominal operations, and complete hemostasis is of the greatest importance, especially when entering the thoracic cavity, so that as little blood as possible will enter.

As to the indications for this method: It was particularly desirable to employ it in the removal of large tumors of the chest wall. Numerous attempts have been made to remove such tumors, especially sarcomata of the ribs, involving the lungs and pleura. Previously, tamponade and drawing the lungs forward into the wound were resorted to, in order to prevent the occurrence of pneumothorax; and, while these measures proved successful in some cases, they are not entirely satisfactory, and serious complications, even death, following these procedures are not unknown.

The first case operated on in the pneumatic cabinet under negative pressure was one of sarcoma of the ribs. No disturbance whatever followed the extensive opening of the thorax; the field of operation was exposed freely, showing the advantages of the procedure in cases where such extensive resection of the chest wall is necessary. Soon afterward I had an opportunity to operate in a case of extensive mammary carcinoma involving the chest wall. The case was considered inoperable, because several ribs and much of the soft parts would have to be removed to give even a reasonable hope of securing some slight measure of success. The defect caused by the removal of the tumor was so great as to necessitate a plastic operation. In accordance with the usual procedure in such cases, I transplanted the healthy breast to the site of the one that had been removed, placing it directly over the lung, which filled in the defect very nicely. The flaps were sutured to the surrounding soft tissues by means of a two-tier suture. The result was a complete success. The operation was repeated, with equal success, in a number of other instances, and similar results were obtained by Haecker and Kuettner, at the Breslau Clinic.

Practical experience in ten cases has shown that the dangers of these operations, especially from involvement of the pleura, are lessened greatly, and that the contraindications for the employment of more radical procedures are fewer than before; involvement of the ribs and pleura in mammary carcinoma is no longer a contraindication for operation. It is also possible to operate more extensively and with better results in pulmonary emphysema and tuberculosis, and in performing cardiolysis, although every effort will be made now as before to avoid injury of the pleura. If, however, in spite of care observed, the pleura is injured, my apparatus will absolutely prevent the occurrence of pneumothorax. The possibilities of the method in lung surgery, especially in the surgical treatment of pulmonary tuberculosis, will constantly become greater, but a final opinion must be withheld for the present and we must not expect too much; in fact, I believe that in such cases thoracoplastic operations or the artificial pneumothorax will yield better results.

Before proceeding to discuss the use of my method in the treatment of diseases of the lungs in general, I wish to speak more particularly of its use in the treatment of empyema, where my results have been excellent. It is important not to be content with the lessening of the size of the opening in the pleura through expansion of the lungs; the operation must be performed under differential pressure. The expansion of the lung forces out the exudate that may be present, and prevents the occurrence of pneumothorax, while shrinkage of the lung, with subsequent scar formation, is lessened considerably. All recent empyemas and a considerable percentage of the chronic ones yield quickly without the formation of a fistula; the patient is spared tedious after-treatment and subsequent plastic procedures.

The operation is performed in the usual manner, with a negative pressure of 7 mm. After evacuation of the pus a gauze dressing is applied without drainage, and a mammoth dressing is put on over all, thus preventing the entrance of air into the pleural cavity. The dressings remains in place until the fifth day, when it is removed and a new one applied in the pneumatic cabinet. The lung is now adherent to the edges of the wound, and the subsequent treatment is that for an infected granulating wound.

The diseases of the lung in which surgical treatment is particularly indicated and successful are gangrene and abscess; in fact, it is in the treatment of these conditions that lung surgery had its inception. When the disease is superficial, the treatment is simpler, and pneumothorax need not be feared. The treatment is the same as for the same conditions elsewhere in the body. It is only when the lesion is central that the operation is of magnitude. An operation performed under negative pressure possesses several advantages.

Aside from the fact that the possibility of pneumothorax is obviated, the anatomic relationship of the parts is more apparent, because of the expansion of the lungs. The diseased portion of the lung is brought into view and the lung is sutured to the edges of the wound. The abscess is opened by means of the galvanocautery. It is here that my method is especially advantageous in that it prevents the aspiration of foreign material into the healthy parts of the lung. The excess pressure in the bronchi prevents gravitation of fluids and forces every particle of free blood to the wound surface, where air-bubbles are seen to burst, driving before them particles of blood and pus. Experiments on animals have proved the correctness of these statements. Even when a large blood vessel has been severed, one which empties itself directly into the lumen of the bronchus, aspiration does not take place. The blood is forced out by the excess pressure.

This fact is also of the greatest importance in the after-treatment, and experience has shown that changes of dressings, at least at the beginning, should be made under differential pressure, not because of pneumothorax, but solely because it tends to remove blood and pus from the bronchi.

As to the bronchiectases: Here we must distinguish between the varieties of this affection. When the lesions are multiple, operative intervention, with the hope of a radical cure, is out of the question, and the same is true of the tuberculous bronchiectases, even when only one lung is involved. Thoracoplasty, with extensive resection of ribs and mobilization of the chest wall, is preferable to intrapleural treatment. At present an operation is indicated in bronchiectasis only when the lesion is isolated in one lobe of the lung. This lobe must be resected.

Two years ago I saw a case of this kind, occurring in a girl 22 years old. The lesion was circumscribed and confined to the lower lobe of the lung. The operation was done under negative pressure. The whole lower lobe was of a deep, dark, bluish-red color, contrasting clearly with the grayish-red color of the remainder of the lung. The diseased portion of lung was of a firm consistency, hard and airless. In these cases the best procedure is resection of an entire lobe, as in the case of tumors.

Primary carcinoma of the lung is exceedingly rare. Only once have I resected a considerable portion of the lung for this affection. The case was a very interesting one. A woman 34 years old had severe pains of about three months' duration in the left side. The pain was radiating in character, paroxysmal, resembling a typical intercostal neuralgia. Pressure on the nerves promptly induced a paroxysm of pain. Inasmuch as the examination failed to disclose any pathologic condition, the patient was treated with the usual remedies, but without securing relief. She was sent to the clinic for nervous diseases at Greifswald, where a diagnosis of intercostal neuralgia was made. At her discharge her condition was the same as before.

She then was referred to the surgical clinic. Her physician informed us that there was a circumscribed area of dulness in her left side, which did not convey the impression of either an exudate or of pneumonia. He suggested a malignant growth. The examination confirmed these findings, and we further succeeded in making an absolute diagnosis of carcinoma of the lung because of the finding of nests of carcinoma cells in the sputum. Failing to find a similar tumor elsewhere in the body, we concluded that this was a case of primary carcinoma of the lung.

An incision, 30 cm. long, was made in the left fourth intercostal space. There were no adhesions between the pleuræ. The tumor involved the left lower lobe, except at its most dependent portion, and in two places extended into the upper lobe. The surface of the tumor was nodular. Two of these nodules, about the size of a small apple, situated in the parietal pleura under the fifth rib, pressed on the intercostal nerve, thus explaining the intercostal neuralgia. At this particular spot the tissues had grown together and there was also some necrosis of the ribs, the result of pressure. I resected extensively the third, fourth and fifth ribs and the attached soft tissues, so as to secure free access to the lung. I was successful in isolating the diseased tissue, but was unable to extirpate because the pleura was firmly adherent to the pericardium and the diaphragm. Only the top of the tumor was removed.

The patient recovered quickly from the operation and was discharged after four weeks. Three months afterward she was still free from pain, but was rather weak.

Operative intervention in bronchiectasis and tumors of the lung should, if possible, consist in amputation of an entire lobe of the lung. Occasional attempts have been made to do this, but the procedure has been discouraged. The main difficulty in such resections is caring for the bronchus afterwards. On it depends the success of the operation. It is rather difficult to suture a bronchus, and if the sutures loosen, air will enter into the mediastinal tissues, producing mediastinal emphysema, a serious complication. Various operators, have called attention to this fact, especially Garrè, Talke, Tiegel and Friedrich. According to the latter, the technic of the operation is as follows: After exposing the bronchus at the hilus, and, if possible, freeing the vessels from it, it is clamped loosely with forceps protected by rubber tubing. The forceps were passed in from before backward. The bronchial mucous membrane is curetted away with a small sharp curette. Three cm. above the opening of the bronchus in the diseased area a ligature is passed around the tube and tied tightly. The proximal clamp is then removed. The lumen of the bronchus will eventually be closed by granulation tissue. If necessary, a second ligature—one of catgut—may be applied proximal to the main ligature, so as to act as a dam to lessen the tension on the main ligature that might be caused by attacks of coughing. The principal ligature, of fairly heavy silk, must be tied securely. The wound in the lung must be easily accessible. The dressings must be changed in the pneumatic cabinet, because in that way only can pneumothorax be prevented. I have seen this accident occur once because this precaution was not taken. The patient died from a suppurative pleurisy. The immediate danger of pneumothorax, while serious, is not to be feared as much as the infection which may occur.

It was to be expected that, as soon as it was possible to obviate the occurrence of operative pneumothorax, surgeons would view the treatment of intrapleural injuries differently. Many surgeons, particularly Tuffier and Garrè, recommended care in the treatment of injuries of the lung, particularly when there was much hemorrhage. The principal reason for this caution was the fear of pneumothorax and infection. Nevertheless, operative procedures proved successful in many cases of lung injury (Garrè, Tuffier, Grunnet, etc.). I have operated under negative pressure twice for rupture of the lung, and Kuettner performed suture of the lung hilus successfully in two severe cases of injury. He operated solely to check hemorrhage. In my cases the lung was ruptured or torn by fragments of the rib causing a tension pneumothorax. Both patients were highly dyspneic when they came to operation and there was extensive emphysema of the skin in both cases. It was in these cases that I was particularly impressed with the disastrous results following pneumothorax and emphysema of the diaphragm caused by displacement of the heart and the healthy lung. But above all was I impressed with the inefficiency of the previous methods of treatment and the particularly happy results that were to be obtained from operating under negative pressure. As soon as the skin incision was made, I noted that the air contained in the tissues was pouring out into the pneumatic cabinet and very soon all evidence of emphysema had disappeared. When the thoracic cavity was opened, the collapsed lung was seen to be resting on the distended mediastinum, but while we were watching, it began to expand and at the same time the mediastinal emphysema gradually disappeared. The two layers of the pleura again were in contact and the heart action became normal after the air pressure was removed. These observations led me to examine into the clinical history of tension pneumothorax more closely; but of this I will speak at another time.

I wish to mention in this connection that, when operating under negative pressure in these cases of lung injuries, the injured area is easily located. The air is seen to pass out from it in the form of blood-red foam; or the hand may feel the air current as it passes out from the injured area. Of the various methods employed for suturing the lung tissue, I prefer those of Tiegel and Friedrich. It is important to bring the serous surfaces in apposition, as in intestinal suturing. Whether drainage should be employed is a question that I would answer in the negative. My experience has been that it is preferable to close the wound immediately, unless the operation is performed some time after the occurrence of the injury and when infection is present in the pleural cavity.

My method of operating under negative pressure is indicated particularly in operations on the thoracic portion of the esophagus. Heretofore, this has always been a great problem. After many trials and tribulations and much experimental work on animals (in which I had the guidance of von Mikulicz), I succeeded in developing a technic which made it possible, at least in the case of animals, to resect successfully large portions of the esophagus. The essential feature of the method is the avoidance of sutures and the use of the Murphy button to secure anastomosis. Operations which may be and have been employed successfully on human beings are gastro-esophageal anastomoses and resection of the cardia. I have on previous occasions described this operation and have employed it in nine cases. All of the patients died. Similar results were obtained by Tuffier in three cases, Kuettner in two cases, and Wendel in one case of carcinoma of the esophagus. It may seem venturesome for me still to believe in the possibility of resection of the thoracic portion of the esophagus, and yet the repeated observation that the tumor was too large or that it was operated on when already far advanced, or the belief that the technic was at fault, led me to conclude that in favorable cases the operation must prove successful.

A case that pursued the most satisfactory course of any of the esophagus resections was one in which an operation was done last year. A woman 45 years old had a carcinoma of the esophagus about ten cm. in diameter, the upper end extending slightly above the left bronchus. In spite of its position, it was possible to isolate the tumor and not injure the vessels and nerves. I resected that portion of the esophagus, but unfortunately I could not bring the ends together. The upper end was switched off sideways. The patient died on the fifth day from pleurisy and pericarditis. However, the operation itself was technically successful, and I believe will prove entirely successful in suitable cases. The most favorable cases are of carcinoma of the cardia. An examination of twelve thousand dissected cases has shown that this class of tumor is relatively frequent, metastases late, and does not spread rapidly locally. Our operative results thus far have shown that these tumors should be attacked through the thorax and not through the abdomen. If the tumors are small, the end of the esophagus is invaginated into the stomach, and at a second operation the tumor is excised through the stomach. In the case of larger tumors, the tumor is resected and an anastomosis is done between the stomach and esophagus. It is advisable to make this a lateral anastomosis, using the Murphy button, passing the male portion of the button into the esophagus through the mouth by means of a long sound.

The thoracic cavity is opened in this operation in the fifth interspace, with or without resection of the ribs. In order to expose the field of operation as much as possible, the incision is kept open by means of Mikulicz's rib clamp or retractor. The negative pressure during the operation ought not to be higher than three to five mm., being raised to seven or eight mm. toward the end of the operation. After having sutured the periosteum, the skin and fascia are closed by means of tier sutures.

On basis of extensive studies and one experience on the living subject, I have come to the conclusion that in cases of deep-seated carcinoma of the cardia, i. e. cases in which the upper border lies below the diaphragmatic slit, resection of the costal arch, as recommended by Dr. Willy Meyer, of New York, for this purpose four years ago, is a procedure of great practical value.

Surgery of the heart has been advanced the least by this new procedure. The reason for this is that injuries to the heart always occur accidentally and any treatment is done in an emergency. A series of operations on the heart has shown that it is possible to expose the heart freely without opening the pleural cavity, and that the patient usually recovers from pneumothorax when this occurs. But it is probable that surgery of the heart will profit and be advanced by this new method. A year ago I proved experimentally that the use of negative pressure was advantageous in many ways, which I can not mention specifically at this time.

I can not close my remarks on this subject without referring briefly to exploratory thoracotomy. I believe that this is justifiable more often than is thought, because of our shortcomings in the diagnosis of diseases of the thoracic cavity. The same is true of the thorax as of the abdomen; an exploratory laparotomy or an exploratory thoracotomy will often clear up a doubtful case. This is particularly true in the case of foreign bodies in the lung, when the Roentgen ray fails to make the diagnosis. The operability of esophageal carcinoma may also be determined by thoracotomy when both the Roentgen ray and esophagoscopy have failed. Of course, the incision should not be a large one, and rib resection should not be resorted to. If done quickly and cautiously, the incision is free from danger and will prove valuable in many cases. Only in this way can we hope to make haste slowly.

DISCUSSION

ON PAPERS OF DRS. SCHAFER, SAUERBRUCH, ROBINSON, GREEN AND MAURY

Dr. George W. Crile, Cleveland, Ohio: The ultimate object of artificial respiration is that of affording the fixed tissues, especially the central nervous system, the exchange of gases necessary to life. To accomplish this the circulation and the respiration are equally essential. Air hunger is just as marked in failure of the circulation as in failure of lung ventilation. When the total amount of blood and the vigor of its circulation is above normal less than normal respiratory effort is needed. For the best results in artificial respiration, then, a good circulation is required. In considering artificial respiration one must take into account the effect which alterations in the intrapulmonary pressure exert on the circulation. The blood pressure in the pulmonary capillaries is low. Intrapulmonary pressure is exerted directly on all these capillaries, hence the entire blood stream is affected. The lower the blood pressure the less intrapulmonary pressure is necessary to block the blood stream. In sheer emergencies there is opportunity for only the simple methods, of which the most effective is the one that supplies a sufficient exchange of air and gives the greatest aid to the circulation. These requirements are fully met by the methods of Professor Schafer. The thread of life may for a time be unbroken if even a very small amount of oxygen be supplied. When one tries to kill an animal by asphyxiation one is constantly surprised at the wonderful rejuvenating power of only a slight amount of air. Both experimental and clinical evidence show that the circulation may be remarkably energized by pressure on the thorax and abdomen. In the majority of operative emergencies there are many obstacles opposing the change from the supine to the prone position. I conclude that rapid, rhythmic pressure on the thorax with the patient lying on the back when the prone posture is contraindicated, is the simplest and most generally useful emergency method.

As for planned cases of artificial respiration I would add a strong word of caution against any considerable change in the intrapulmonary pressure. There is scarcely any more certain and sudden method of killing an animal than by an excessive intrapulmonary pressure. Now the circulation in a normal animal may not be much hampered by a certain amount of increased pulmonary pressure, but in the states of low blood pressure the circulation may unexpectedly collapse. Recent experimental research has proved that the circulation of an animal carefully overtransfused with blood from another animal becomes stable and the blood pressure is raised. Changes in intrapulmonary pressure affect the circulation far less, and such an overtransfused animal endures intrathoracic pressure far better. When there is an increased volume of blood and increased circulatory vigor, the respiratory movements diminish. Conversely, when there is a failing circulation, respiratory movements become increased. In planning a hazardous chest operation, if the heart is normal, the chances for a successful issue seem to be greatly increased by first rendering the circulation stable. There are a number of methods whereby a sufficient amount of oxygen may be supplied, but there are few methods that do not in the case of weak circulation threaten the circulatory stability. On the whole, the problem of supplying the required amount of oxygen *per se* is not difficult. The real difficulty is met in providing lung ventilation without interfering with a weakened circulation.

Dr. Willy Meyer, New York: Surgical pneumothorax has, up to date, been the principal barrier to further advance in intrathoracic surgery, and that up to a time when abdominal surgery has had its triumphs the world over. Dr. Fell of Buffalo devised and Dr. O'Dwyer improved the apparatus for intubation, and Dr. Matas has further improved it, adding an arrangement for general anesthesia. But tracheotomy or intubation is not what we surgeons want for practical purposes. Tracheotomy means a grave addition to the surgical trauma, especially for older patients, and an intubation apparatus is unreliable for cases of retching and vomiting. Besides, the accumulating intrabronchial secretions can not be expectorated. Even rectal anesthesia would probably not overcome this trouble.

What is essential for good surgical work is that the narcotizer should have free access to the patient's head, especially the mouth, at all times. He must be able to turn the patient's head to one side, and clean out his throat just as thoroughly and easily as he is accustomed to doing this during other operations.

In 1893 the late Professor von Mickulicz charged his assistant, Dr. F. Sauerbruch—to-day our guest—to find a more practical procedure in order to overcome the dangers of pneumothorax. This he accomplished by constructing an operating cabinet, within which he has done five operations on the human subject, and a great many on animals. The beauty of this cabinet is that it can be used for negative as well as for positive pressure. If the operation with negative pressure is desired, the patient's head is placed outside of the cabinet and the body inside; if positive pressure is desired, the head is placed inside and the body outside.

In either case the anesthetizer has free access to the patient's head. If he is inside of the cabinet and positive pressure is used, the excellent ventilation provided for will prevent his becoming anesthetized himself. The same suction pump, arranged with a T tube, provides for negative and positive pressure. This cabinet allows of free intrathoracic operating with impunity. Simultaneously with Sauerbruch, though independently, Professor Brauer of Marburg, in 1904 designed an apparatus for positive pressure which, though since improved, labors under the same drawbacks as all other devices for positive pressure, namely, that any accidents occurring in the course of the anesthesia can not be met properly.

The drawbacks to a more general use of Sauerbruch's cabinet thus far have been its cost and its size. In its present shape, however, it is much less expensive (about one third of its original price) and to cheapen it still more Dr. Sauerbruch has planned to have one made of canvas, properly painted. He also intends to have a small cabinet placed on castors so that it can be wheeled to the patient's bedside, should it become necessary to change the first dressing under pressure difference. Sauerbruch has solved the problem in either direction. It now remains for us surgeons to adopt and try the procedure.

We all know that esophageal cancer is the least malignant of all the types of carcinoma, including the colonic. And yet, what do surgeons do in these cases up to the present time? They perform gastrostomy or dilate the stricture as long as this can be done, and then let the patients die. This must be changed. In resecting the esophagus by the intrathoracic route, or in attacking a cardial cancer from the abdomen with the help of osteoplastic resection of the costal arch, we must be prepared for opening the pleural cavity. The abdominal operation also must, therefore, be done under differential pressure. The greater majority will, as a matter of course, be done by the intrathoracic route. Professor Sauerbruch has greatly improved the operative technic. He closes the proximal cut end of the esophagus by infolding, and after having pulled the stomach into the thorax—and this for the reason that the esophagus can not be stretched—does esophagogastrostomy by means of Murphy's button introduced on a long forceps or stiff bougie by way of the mouth. Care must be taken to have the stem of the button penetrate also the pleura in order that this serous membrane may be pressed against the peritoneal covering of the stomach within the grasp of the button. The latter has of late been improved for this operation at the research laboratory of the College of Physicians and Surgeons of New York. Professor Sauerbruch, in this way, saved twelve out of thirteen dogs experimentally operated on; surely an excellent showing. The nine human beings operated on by him in the same way were afflicted with malignant esophageal stricture. All died, but every one of the patients was in a decrepit condition when the operation was undertaken, and death was not due to any defect in the method of differential pressure in a single instance. There can be no doubt that if we operate early the results will be correspondingly better. Surgeons should work together toward this end. We must succeed in doing intrathoracic resection of the esophagus for carcinoma under negative or positive pressure and save the patient in early cases as long as the lymphatic glands are not involved If such involvement has occurred, resection is useless, as it indicates that the growth passes the borderlines of the esophagus.

Dr. H. H. Janeway, New York: The first experiments which I made in intrathoracic surgery were performed under conditions of negative air pressure. These experiments were made in a hermetically sealed chamber, large enough to hold the operator and two assistants. The work done within this chamber was confined to resections of lobes of the lung, and sufficient successful work was done to render the experimenters familiar with the conditions or operating under negative air pressure. These experiments, however, were interrupted by peculiar outside circumstances, and since then I have adopted the positive pressure method of Professor Brauer I have found the negative and positive pressure methods equally satisfactory.

The form of apparatus now used to supply positive pressure is essentially the box designed by Dr. Brauer of Marburg and Dr. F. T. Murphy of Boston. The experiments with this apparatus have been entirely limited to attempts at resection of the oral end of the stomach and the aboral end of the esophagus, and certain points of importance have been developed. The first is the fact that greater asepsis must be maintained in intrathoracic surgery than elsewhere in the body. I believe that raw edges of mucous membrane can not be exposed here with the same impunity with which they are within the abdomen. The second fact developed is that resections within the thorax can not be safely, or perhaps even successfully, performed by the suture method. In a series of operations done by this method there was a mortality of 100 per cent. The anastomosis was completed in each case in such a way as not to expose in any stage an infected edge of mucous membrane, and a double line of circular Lembert sutures were introduced. Nevertheless, I doubt whether in any one of them the anastomosis was or could be made tight enough to resist the cupping effect of the partial vacuum existing within the pleural cavity after the chest wall was closed. Indeed, the condition may be likened to a Bier's hyperemia with many of the advantages turned into actual disadvantages. The insufficiency of the suture method to prevent leakage was confirmed by test anastomoses made with the button-and-suture method outside of a dog's body, on segments of intestines removed, and subsequently subjected to a hydrostatic pressure of 250 mm of mercury. My experience, therefore, and Dr. Sauerbruch's agree that the successful accomplishment of this anastomosis requires the use of the button. The Murphy button is unsatisfactory from the standpoint of time and from that of aseptic introduction. The new button, on the contrary, is quickly and cleanly introduced, and its use constitutes a decided advance. In construction of the button I have suggested to Dr. Green that an elongation of the spring ring would so protect the perforating knives that no harm could be done with them during the introduction of the button, and also that the cutting edge of the knives be broadened out a little below the point so as to give immediate drainage. The success of intrathoracic-gastroesophageal resections depends on hermetically sealed circle of union. This is not safely attempted by suture or by the Murphy button. We deem it most important to provide against the loss of heat during the operation. The inspired air within the box is warmed, and, in order to diminish the general and local shock accompanying intrathoracic work by an adequate supply of external heat to the body of the subject we have made use of an electric pad, with very definite beneficial effect. In my apparatus the manometer is situated within view of the operator, his assistant and the anesthetist. This manner of regulating the air pressure has been utilized rather than any automatic arrangement; first, because of its simplicity; and second, because it was very rarely found necessary to change the position of the stop-cock, for the purpose of maintaining a constant pressure, after the operation had started. The position of the glass porthole is such that the subject being anesthetized is constantly within full view of the anesthetist. Inside the box is a bracket for the support of the head of the subject. There are also lights along the rear wall. These serve the double purpose of affording illumination and of keeping the atmosphere within the box at the desired temperature. This is a most important point, for in the opening of the pleural cavity, and the exposure of this large surface to the room temperature, much heat is lost, and the respiration of warm air is helpful in keeping the blood at the body temperature. With a temperature of 94 degrees inside the box, the postoperative temperature of some of my dogs has been 101, or about normal for this animal. One hand is sufficient for managing the anesthesia. In an emergency, however, the other hand can be introduced through the second opening.

Dr. George E. Fell, Buffalo: I happen to be probably the first man to demonstrate practically the value of forced artificial respiration in saving human life, and that is now over twenty years ago. I was professor of physiology in a medical school and also a medical practitioner. When I began my work of "forced respiration," the medical world (through Marshal Hall), said that we must not use bellows of any kind. In my physiologic work in opening the chests of dogs I discovered there was much error in this dictum. After I lost my first patient—a man who had taken morphin—after trying the Sylvester method I determined to use my laboratory methods in the next case. A man took 16 grains of morphin. After working two hours and a half by this method I saved his life. On the knowledge of the defects in this apparatus I built the apparatus I now use in my work and exhibit here.

The same principle can be applied to thoracic surgery, and readily applied. With this apparatus I breathed for 18-day-old infant who had been given one grain of morphin accidentally. The little one was held in a tub of warm water when I saw her, and had been under the influence of the poison for two hours. I had no hope of saving the baby's life. I did a tracheotomy, passed a catheter into the trachea and built it up with larger catheters until I could connect it with my apparatus. I succeeded in keeping the child alive for two hours, but it had received so much morphin that it was impossible to save its life.

In all my work I have been trying to simplify the method so that it can be used as an emergency apparatus. A medical student, employed in the postoffice at night, began to take nux vomica to brace him so that he could continue both his work and his studies. One night he took instead several hypodermic injections of 1/40 grain of strychnin; then he began to notice the contractions of strychnin poisoning. In order to stop this he took morphin hypodermically. He was found unconscious in the morning. I began breathing for him with this apparatus, using the hard rubber face mask which prevents the air from passing outside. I breathed with that for a while, but found it unsatisfactory. Then I tried tracheotomy, using my tracheotomy tube, and respired for him from 9 a. m., July 3, until 10 p. m., July 7—four days and three nights of interrupted respiratory work. He lived, and is now practicing medicine on the Panama Canal hospital service. A boy 16 years old broke some ribs while playing ball and took chloroform to overcome the pain. After this he took about 26 or 28 grains of morphin in a tumbler of water. I breathed for him through a tracheotomy tube for about eighty hours and saved his life.

When you force air into the lungs you expand them as in normal respiration. I have a pair of bellows of which three movements suffice for the inspiration and three for the expira tion in an adult. A valve controls the inspiratory and expiratory action. The apparatus is simple and satisfactory. As the air goes from the bellows it passes through a channel out of the valve, tending to produce a slight vacuum, if attached to the lungs it has a slight tendency to draw out air, which slightly aids expiration. When you press down on the valve the air passes into the lungs. Attached to the valve is a tube connecting with the oxygen apparatus. When you press down on the valve both air and oxygen are forced into the lung. This apparatus illustrates the so called positive method. In the surgery of the chest both the positive and negative methods will prove of great value. Professor Schafer's new method is a step in advance but taking equal cases it will not accomplish what positive forced artificial respiration will, and is not applicable in surgery of the thorax.

Dr. John B. Murphy, Chicago. The term pneumothorax" is misunderstood. Pneumothorax, *per se*, does absolutely no harm as I demonstrated and reported in a paper ten years ago. It is the absence of the expiratory exchange that makes the condition of pneumothorax a dangerous one. In 1,700 cases of artificial pneumothorax by nitrogen injections where I used from 30 to 180 c.c. of the gas, I did not have a single case of collapse from the pneumothorax. Why? Because it is not the admission of air into the pleura that makes the danger. It is the absence of respiratory change that makes the condition a dangerous one. You can collapse one lung completely immobilizing the mediastinal septum without interfering with the patient's comfort and ease.

Dr. Sauerbruch's cabinet is admirable, it meets every indication. It can be used for negative and for positive pressure, but it is not a question of the air that gets in, it is the fixation after the air is admitted. For instance remove a section of a dog's chest wall, the mediastinum vibrates freely and ruptures in three to five minutes. On the other hand let the air enter and clap one hand over the opening and the dog goes on breathing just as if nothing had happened. If the opening be made large and not small the subject will not be under respiratory difficulties. It is the little opening that admits more air than goes out that produces the plus pressure presses the diaphragm to one side as so commonly occurs in rupture of the lung and causes the patient so much trouble. The doctor can overcome the difficulty in a moment by taking a large trocar and inserting it between the ribs. The trouble is overcome in a minute as far as the plus pressure and dyspnea are concerned. Where there is hemorrhage from the lungs so common in everyday practice a plus pressure can be produced in exactly the same way. By introducing a trocar covering the end with cotton so as to prevent the introduction of germs with each inspiration covering the end of the trocar and removing the obstruction when the subject expires, one can produce a plus pressure that will stop the primary hemorrhage. It will not stop secondary hemorrhage, but a plus pressure is obtained at once simply by placing the finger over the trocar.

With these points kept in mind we can look for better results in the treatment of surgical lesions of the lung. My enthusiasm of ten years ago has diminished materially however, on account of the incurability of so many lesions of the lung by mere extirpation of a portion of it. But we should have these things under our control in a measure at least because of their scientific value and the probability that they will become of greater practical value. The mere removal of a fragment or lobe of the lung was done four hundred years ago. I have opened a dog's chest, drawn out his lung and let it flatten on the surface merely preventing the air from going in and out through a small opening, which produced a plus pressure and diminished respiratory exchange. It is this diminished respiratory exchange that must be kept in mind, and not the mere presence of air in the pleura.

Dr. Victor J. Baccus, Chicago. At the last meeting of the French surgical congress Broca remarked that a pneumothorax either accidental or intentional, was not always dangerous to the patient. In his operations on the chest entailing the opening of the pleural cavity he allows the air to enter through a small opening thus permitting the lung to collapse slowly. He advises the withdrawal of the anesthesia temporarily—a few minutes suffice. The patient learns quickly to breathe with one lung. Then the operation is continued. In Broca's hands pneumothorax has never proved fatal.

Dr. M. B. Tinker, Ithaca, N. Y. We have, most of us been accustomed to make use of the methods of Hewitt or Sylvester in cases of respiratory failure on the operating table and of foreign body in the air passages in which the patient had not breathed for some time. In case no apparatus is at hand, Professor Schafer has shown conclusively that the older methods do not give the patient sufficient air. In abdominal and many other operations it is obviously impracticable to turn the patient on his face to practice Professor Schafer's method. It occurred to me in teaching anesthesia, some time ago, that we could use a combination of the older methods. If we elevate the arms above the head, thus opening the chest wide, we produce forced inspiration, while to produce expiratory effort we bring the elbows together over the chest and compress the chest thus getting the action of the Hewitt and Sylvester methods combined. A test of this combination method in the physiologic laboratory of Cornell University shows that it gives a fairly satisfactory amount of air to the patient. Before I had tested this method in the laboratory, however, I had used it in two cases of foreign body in the air passages. In one case the patient had stopped breathing for five minutes, in both cases the method was successful.

Professor Edward A. Schafer, Edinburgh. Dr. Tinker failed to state how many minutes he continued this artificial respiration. If you are going to take the trouble to draw the hands up above the head, you are doing a lot of useless work, because you get abundant air into the lungs without such a procedure. In cases of drowning the prone position is most strongly indicated.

Dr. F. Sauerbruch, Marburg, Germany: No doubt some of you will expect me to answer the question as to whether for the performance of operations under artificial respiration we should use the apparatus for positive pressure, as devised by Brauer, Heller, Robinson, Meyer, Kuhn and others or whether we should employ negative pressure. The difficulties of any kind of artificial respiration consist in the danger to the lung tissue. If, in animals no damage results from pumping air into the lungs artificially this must be ascribed to the fact that the animals experimented on are healthy beings. In the human subject needing operation this is different. Here the changes wrought are frequently so great that artificial respiration of any kind is by no means an indifferent factor. To my mind, it can only be a question of whether positive or negative pressure should be employed. The physiologic apprehensions regarding the positive and negative pressure methods have been shown, by the works of Brauer, Seidel, Meyer and Dreyer to be without foundation. The points in favor of the apparatus for positive pressure are that it is smaller, cheaper and easier of transportation and that communication between operator and anesthetizer is more readily established.

An objection frequently advanced against the chamber for negative pressure is that its use is intolerable to the subject on account of the heat. This objection, however, is unfounded, inasmuch as in the chambers of latest construction the ventilation is so excellent that the air in the chamber does not become overheated any sooner than in the ordinary operating room. Nor is the cost of such a chamber as great as is generally supposed. It is possible to obtain a satisfactory apparatus for from $1,000 to $1,200. Furthermore, any ordinary room can be converted into an operating chamber for operations to be done under differential pressure. All that is necessary for the purpose is to provide for a hole through the door or wall of the room through which the patient's head can be passed, and to supply a suction pump which by the introduction of the T tube can easily be converted into a pump for positive pressure. Eventually one might construct a light easily portable chamber of duck or canvas which would answer all practical purposes. A point of great importance, in my opinion is that in all forms of negative pressure ap paratus we are in a position to arrange for a reliable narcosis (also when arranged for positive pressure) so that disturbances due to vomiting, the danger of aspiration as present when other apparatus for positive pressure is used, are not encountered. Recently we discovered another advantage of negative as against positive pressure, namely, that in case of "tension-pneumothorax" and consecutive emphysema of the mediastinum and subcutaneous cellular tissue the mere opening *of the thoracic cavity under negative pressure* is sufficient instantly to relieve this dangerous condition. With positive pressure this is impossible for physical reasons.

Dr. Samuel Robinson, Boston: One side of the human chest has often been opened without the use of any apparatus and without the onset of alarming symptoms of pneumothorax. Operations fatal to the normal dog have been successful on the human being. There are two reasons for this: The mediastinum of the dog is not a rigid partition separating the two sides of the thorax, but a fluttering membrane which in the presence of a one-sided pneumothorax yields to respiratory variations of the intrathoracic pressure of the unopened side and thus seriously affects the function of the sound lung. The human mediastinum, on the other hand, is a firmer structure with better anchorage. Hence the opening of one chest interferes to a less extent with the excursion of the lung of the unopened side, and one lung can to a certain extent compensate for the loss of the other. Furthermore, operations on the human being are generally in the presence of pathologic conditions in which the dangers are lessened by pleural adhesions and thickened mediastinum. What better proof is there, however, of the dangers associated with opening the human chest without apparatus than the reluctance of operators to perform an exploratory thoracotomy. I believe in the simplicity and portability of the positive pressure apparatus. There is need primarily of an apparatus to render exploratory thoracotomy a safe procedure. Rhythmical inflation is a more complicated procedure and requires skilled administration to obviate its dangers. I believe that the best method is the employment of a constant pressure with ample supply. The tubes conducting this pressure to the respiratory tract should lead either to a face mask or to an intubation apparatus, and my purpose is to perfect this method until simple enough for practical usage. Of the practicability of the method, as such, I am now convinced.

It is to be regretted that the discussion to-day has consisted in the results of animal experiments under positive pressure versus the results of operations on the human being under negative pressure. The latter would at first seem more convincing. Professor Brauer, whose absence at this symposium is much regretted, would have reported the results of the application of positive pressure to the human being as administered with his own apparatus and with modifications of it in European clinics. The operations performed with this simple method, although fewer than those performed in the negative pressure cabinet, are nevertheless equally promising in their results. The cabinet mortality may be higher than that of the positive method, but the serious nature of Professor Sauerbruch's esophageal operations must, of course, be taken into consideration. I urge you, therefore, to bear in mind that the results of operations on the human being under positive pressure have been favorable. We present the results of our animal experimentation to support the method on the basis of physiology and to report improvements in technic.

Dr. N. W. Green, New York: The point Dr. Schafer brought out is valuable. Atropin is a great aid in preventing the effect of reflex irritation in work on the chest. It is a cardiac stimulant. You probably well know the physiologic experiment with the frog's heart, which was excised, stopped by muscarine, and which began to beat again when atropin was dropped on it. We ought to bear that in mind in our surgical work to combat shock. In the experiments on dogs I have opened both pleuræ in some cases. In other cases I opened only one pleura. It is well to remember that the mediastinum is very movable in the dog and also in children. Opening one side in a child in case of an empyema or anything like that may be a very serious matter, unless some aid is present, because the mediastinum collapses so easily toward the side that is not opened. If by any chance you have given too much ether—and ether kills by failure of the respiration—you can resuscitate the animal or person by means of rhythmical inflation. If you have not rhythmical inflation, you can produce it by pressure with the hands on the chest. When failure of respiration occurs, quite a time elapses between the time when you have such failure and heart failure, and rhythmical respiration carried on during that time may save the life of your patient.

LARYNGEAL CRISES AND PARESIS OF THE ABDUCTORS OF THE VOCAL CORDS

AS IMPORTANT EARLY SYMPTOMS OF TABES, WITH THE REPORT OF A CASE.

OTTO T. FREER, M.D.

With Supplementary Report by Stanton A. Friedberg, M.D.

CHICAGO

Among the symptoms of tabes dorsalis those furnished by the larynx commonly appear early in the disease, may be the first ones to attract attention, and may, indeed, be the first evidences of the affection. Those unacquainted with the possibility that such laryngeal manifestations may indicate tabes fail to understand their significance and usually fall into the error of supposing some local disorder of the larynx, perhaps of slight or no importance, to be the cause of the laryngeal symptoms, whose significance, as evidences of a grave nervous disease, is thus not appreciated. As an example, in the case reported in this paper the opinion was advanced that a small cyst of the lingual surface of the epiglottis, of no consequence whatever, was the cause of persistent recurrence of spasms of the glottis characteristic of tabetic crises. In distinction to the ease with which those are led astray who are ignorant of the laryngeal phenomena of tabes, they suggest the disease at once, even when they are present in the slightest degree, to those having a knowledge of them, and they thus lead to a search for the well-known and positive signs of tabes, such as ataxia and rigid pupils, which unequivocally demonstrate its existence.

The usual laryngeal manifestations of tabes are the so-called laryngeal crises, which are recurrent attacks of prolonged spasm of the glottis, and paralysis of the abductor muscle of the vocal cord, the posterior cricoarytenoid. So significant of tabes is the isolated paralysis of this muscle that Sir Felix Semon speaks of it as the tabetic form of laryngeal paralysis *par excellence.* While at first merely indicated by deficient abduction of one or usually, as it is commonly bilateral in tabes, both cords, in time a spastic contracture of the adductor muscles of the cord is superadded to the abductor paralysis, which draws the vocal cord inward toward the midline, so that it finally remains permanently in the median position. This permanent adduction creates no symptoms when the affection is unilateral, but may lead to serious dyspnea when it causes both cords to be in continuous contact in the mid-line. The contracture of the adductors referred to is very slow in developing and years may pass by before it is complete, so that in very chronic cases of tabes the cords may even never meet in permanent contact before the individual dies, and, therefore, in many cases the posticus paralysis, even when bilateral, either creates no symptoms at all or only after a long period. For this reason it is usually only discovered when a laryngoscopic examination is made.

As a typical illustration of the laryngeal symptoms of tabes I submit the following case report, which is followed by a description and consideration of the manifestations of tabes as they affect the larynx:

History.—The patient was 37 years old and a cabinet maker. He had been married sixteen years and had five healthy children. Twenty-one years ago he had gonorrhea, but denied syphilis. The only other previous illness he remembered was typhoid fever, at the age of 13. His present disease began six months ago with a severe vomiting spell which seemed to be merely seasickness, as it occurred while he was crossing Lake Michigan in rough weather. After he went ashore, however, he continued to have attacks of vomiting at intervals for four months, when they ceased to trouble him. His vomiting occurred whether his stomach was empty or full, the seizure on some days returning three times, on others but once and occasionally several days passing without a vomiting spell. Three months ago while in a room where men were smoking his breath was suddenly shut off by a catch in his throat, which passed off when he went out. Two days later, on the street, he had a much more pronounced attack of spasmodic stoppage of breathing which began with a cough, arrested suddenly by a closure of his throat, so forcible that he could not breathe. He then fell to the ground unconscious and when he recovered, found himself lying in the street. He then arose and walked away. The next attack occurred while he was working. He fell over against his bench, unable to get air, but did not fall down or become unconscious. After these first two suffocative spells others followed at intervals of hours or days, but they never caused him to become unconscious again or to fall down. The attacks began with a cough, followed by a closure of the throat, lasting from one-half to three-quarters of a minute and preventing breathing or utterance of a sound. After this period of complete closure, the air entered his lungs with difficulty, while a loud crowing noise was created in his throat by his breathing. The suffocative seizure also occurred during his sleep, awakening him and preventing his going to sleep again for fear of another attack. A month ago he went to the German Hospital and was treated there with potassium iodid, 72 grains daily. During this time his attacks increased in severity. Of late, since he had been taking potassium bromid in fifteen-grain doses three times a day, the spells of throat spasm had become much less severe and frequent, and no longer happened in his sleep. A characteristic of the attacks was their invariable onset with a coughing spell, which led at once to the suffocative spasm described. The patient had no pain in the limbs, or girdle sensation about his trunk. He had a neuralgic sensation in his left leg, where it was perforated by a bullet and pierced by a bayonet along the inner surface of the tibia in a war some years ago. Four years ago, during a number of months, he had to employ abdominal pressure in order to urinate and at that time he was apt to have urine escape without his knowing it, when he was walking. Two months ago he had a return of this symptom for six weeks.

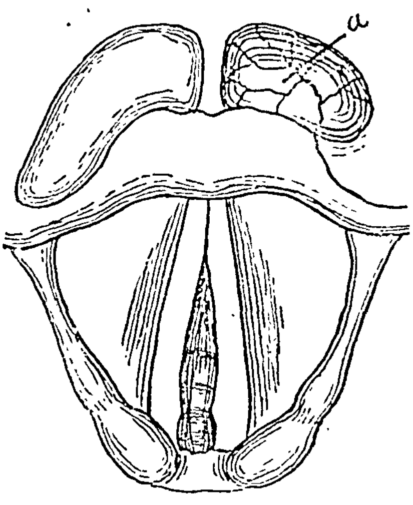
Laryngeal Examination.—The vocal cords although coming well together on phonation, were only insufficiently abducted during deep inspiration to the extent shown in the illustration. In other respects the interior of the larynx presented no abnormalities. Nose and nasopharynx normal. A small cyst occupied the left vallecula on the lingual surface of the epiglottis.

The following neurologic examination was made by Dr. William Healy:

Neurologic Examination.—In both eyes pupillary reaction to light was much less than it should be and sluggish. No pupil reaction when staring into distance. Incomplete Argyll-Robertson pupil (pupillary reaction to accommodation, but not to light, when staring into distance). Fundi normal. Ocular motions normal. Patient admitted having ptosis for three days a month ago. The Achilles reflexes were both absent. Knee reflexes absent even on reinforcement. Anesthesia to camel's hair brush, beginning above the mamillary line and reaching down nearly to the umbilicus, on the anterior surface of the thorax. Partial, but distinct analgesia below the knees in both limbs. Testes insensitive. Sense of smell normal. Some incoordination when pointing with fingers. When eyes were closed he could not guide the tips of his index fingers together so as to make them touch. Slight incoordination of lower extremities. Romberg's symptom (swaying of body when standing with both feet together and eyes closed) was present in moderate degree. Blood pressure normal. Some dizziness *in descending stairs. He finds* that he has no trouble in walking about in the dark.

Since writing the above history the patient has entered the laryngologic service of Dr. Stanton A. Friedberg in Cook County Hospital, who gives a further account of his affection in a supplementary report, with a more accurate observation than I could make of an ambulant patient. The report follows this article.

The pupillary changes, the absence of the knee and Achilles reflexes, the area of slight anesthesia found below the mamillary line, the incoordination, the insensitive testes, the partial analgesia below the knees and the history of a spell of bladder insufficiency and ptosis are, even without the other characteristic symptoms of tabes detailed, sufficient to prove its existence in this patient. The features of laryngologic interest in the case are the spells of interrupted breathing, which the patient describes and which I regard as tabetic laryngeal crises, and the paretic state of the abductors of the cords demonstrable by laryngoscopy.



Freer's case of laryngeal crises. View of larynx showing abnormal approximation of cords during respiration; *a*, cyst of epiglottis.

In my study of the phenomena presented by this patient I have been guided mainly by the classic section on the nervous diseases of the larynx and trachea written by Sir Felix Semon in Heymann's Handbuch. It is unfortunate that this perfect exposition of this difficult theme, a work of 207 pages, does not exist in English, for it makes its intricate subject so clear to the understanding and so vividly interesting that its study becomes a pleasure and not a task. An English edition of Semon's work would tend to arouse the interest in laryngeal neurology in America which it has inspired in Germany and which has led to such important recent researches there in the innervation of the larynx.

I will precede a consideration of the first of the phenomena, the sudden shutting off of the patient's breath, by the following translation of Semon's description of the symptoms of the laryngeal crises of tabes:

> The symptoms vary greatly in gravity. In the mildest cases they appear merely in the form of sudden, severe, spasmodic attacks of coughing, possessing no demonstrable organic cause and obstinately resisting all treatment. In cases of medium intensity the cough is preceded by a feeling of tickling, stinging, scratching, burning, or of a foreign body in the laryngeal region. These sensations are followed by a feeling of being throttled, associated with intense anxiety. The breathing becomes labored and then a coughing spell follows, accompanied by long-drawn inspirations, short explosive expirations and evidences of general disturbances of the circulation, such as cyanosis. Retching, attacks of sneezing, salivation, dizziness, sweating and pain in the extremities have been observed and Semon has seen an attack of laryngeal crisis which changed into a gastric one. The paroxysm, most alarming in aspect, ceases after a few seconds or minutes with long, stridulous respirations, which gradually grow less distressing, while the cough dies away. In the severest cases the phenomena described are associated with dizziness, involuntary defecation and urination, loss of consciousness, epileptiform convulsions and cessation of respiration, but even in such extreme instances, as a rule the threatening symptoms disappear spontaneously.

The attacks described by the patient present, typically, the symptoms here quoted from Semon, and may be regarded as belonging to the order of medium severity. In his statement to Dr. Friedberg the patient has described the preliminary abnormal sensations in the larynx or "aura" mentioned by Semon. The characteristic feeling of being throttled, following the aura, is a constant accompaniment of his attacks and also the intense feeling of anxiety mentioned in the description. The typical long-drawn, stridulous respirations succeeding the worst part of the spasm and the final coughing spell are also a part of the seizures. To Dr. Friedberg also the patient spoke of two phenomena often present, dizziness during the attacks and sweating. The second spell even led to the loss of consciousness and falling down characteristic of the severer onsets of the affection. Enough evidences of the disease are therefore present to warrant positively the diagnosis of laryngeal crises of tabes. The only other condition coming into question is ictus laryngis. The symptoms in the seizures of this affection in sequence and quality are identical with the crises of tabes. There is a preliminary cough, then a more or less pronounced spasm of the glottis and falling down and unconsciousness, such as also occurs in the severer type of tabetic crises. The entire lack of any of the signs of tabes, however, serve to distinguish ictus laryngis from a laryngeal crisis.

It has not been my fortune to witness one of the patient's attacks, but Dr. Friedberg's report contains the description of some seen by the attendants at the hospital and of one with laryngoscopic findings seen there by himself. In these seizures the patient complained of severe pain in the laryngeal region lasting for some minutes and also of pain in the region of the heart, indicating irradiation from the medulla into the sensory as well as the motor portion of the vagi nerves. Another evidence of general irritation of the vagi nerves exists in the gastric crises which occurred for so long a period some months ago and which seem to have been supplemented by the laryngeal crises he had later.

Semon says that difficult swallowing, gastric crises and rapid pulse are nervous symptoms often coexisting with the laryngeal crises, but that their most important accompaniment, in a pathologic sense, is paralysis or paresis of the openers of the glottis, the posterior crico-arytenoid muscles or abductors of the cords. Observation has proved this combination of loss or impairment of motion of the abductors, with a tendency to spastic contraction of the adductors in the crises, to be so frequent in tabes that it constitutes a typical phenomenon and is not to be regarded as a mere chance association. The evidence of paresis or paralysis of the abductors in our patient is found in the lack of the outward motions of the cords which should occur during deep inspiration and their permanently close approximation, which narrows the opening of the glottis about one-half (see illustration).

The isolated paralysis of the abductors found in this case is in accord with the rule formulated by Semon, that an organic interference of slow development with the functions of a recurrent laryngeal nerve, always leads first to paralysis of the abductor, (posterior crico-arytenoid) muscle, of the affected cord, paralysis of the adductors, with total loss of motion of the cord, following later if at all. In accordance with this, total paralysis of a vocal cord, which implies, of course, total paralysis of a recurrent laryngeal nerve, is extremely rare in tabes. This discovery of the greater vulnerability of the nerve fibers going to the posterior muscle constitutes the celebrated law of Semon, as it is called. It is especially and strikingly found in the laryngeal paralyses of tabetic origin, so strikingly that Broeckaert, who attempted to disprove the law of Semon so far as it applied to the trunk of the recurrent laryngeal nerve, admits its truth as applied to slow degeneration of its nuclear origin as it is found in tabes. Recent animal experiments and clinical observations extending over twenty-five years, in which exceptions to the law have been searched for by a multitude of observers with the diligence inspired by an ardent controversy, make the conclusion of Kuttner, that the constancy of Semon's law may be regarded as proven, the only one which may be reasonably arrived at. But one exception to the law has been discovered in the long time since it was formulated, and is acknowledged by Semon with characteristic frankness—the celebrated case of Saundby, in which a carcinoma of the esophagus caused degeneration of the portion of the recurrent laryngeal nerves supplying the adductors of the cords while sparing the abductors. As Kuttner says, such an example merely proves the rule.

The greater vulnerability of the nerve fibers going to the abductors has been strikingly shown in the animal experiments of Fränkel and Gad, who isolated and gradually chilled the trunk of the recurrent laryngeal nerve. In all of their investigations, confirmed by Kuttner later, the abductor motions of the cords ceased first and only later did the adductors become paralyzed with fixation of the cord in the cadaver position. As the nerve trunk recovered, on warming, the motions of the adductors were the first to be restored. In explaining the common association of posticus paralysis in tabes with the laryngeal crises Semon says in Heymann's Handbuch:

> As shown in the chapter on laryngeal paralysis, the medullary nuclei of the abductors of the glottis are the first to degenerate where laryngeal paralysis occurs at all in tabes. At the same time, however, the ganglion cells of the closers of the glottis are in a state of increased latent irritability and react more quickly and energetically to reflex irritation than normally, so that conditions that would for instance excite a mere cough in a healthy person create spasm of the glottis in tabes on account of this excitable state of the vagi nuclei.

The abnormal sensations in the throat which introduce the crises Semon regards as also dependent on the excessive irritability of the medullary centers and perhaps also the peripheral course of the sensory nerves of the larynx. Burger, Semon states, also regards irritations of the sensory part of the nerves as present in the crises of tabes The unusual symptom of the occurrence of pain in the region of the larynx during the crises complained of by this patient is in accord with this view and indicates central irradiation into the superior laryngeal nerves.

The laryngeal paralyses found in tabes, though often the first and possibly the only paralytic symptoms to occur, are but a portion of a group of paralyses found as results of pathologic degenerative changes in the cranial nerves or their medullary origin Thus paralyses of the ocular muscles, the levator palati, the trapezius or sternomastoid muscles may be found. Indeed, the paralyses due to cranial nerve involvement in tabes may be so numerous and extensive that bulbar paralysis is simulated

The degenerative changes found in the laryngeal paralyses of tabes may be found in the nucleus of the vago-accessorius nerve, in the ascending root of the glossopharyngeal nerve, or in the intrabulbar root fibers of the vagus and accessorius or in their peripheral extensions The degeneration may also be limited to the vagus trunk or that of the recurrens, the medullary portions of the nerves being intact.

LATER HISTORY OF THE CASE BY DR STANTON A FRIEDBERG

The patient was brought to Cook County Hospital in a police ambulance on Feb 10, 1908 He stated that his illness began about eight months before this date when he was seized with attacks of vomiting at irregular intervals which lasted for a period of five months For the past two months he had had dyspneic attacks on going from a warm atmosphere into a cold one and *vice versa* For fourteen days he had suffered from pain on swallowing solids More recently he had complained of some ill defined 'sticking pains in his legs His main complaint was on account of the dyspneic or choking spells which had been more frequent of late About half an hour before the attack there would be a general feeling of warmth over the entire body Immediately preceding it there was a tickling sensation in the larynx, which caused him to cough once or twice and then the spasm followed Vertigo was present during the attack, *not before* There was no loss of consciousness He had repeatedly been aroused from his sleep by the tickling in the throat which preceded his attacks, the latter following on such awakening

Examination—Patient stalwart German, well nourished, muscular Pupils equal, reacted imperfectly to light and very sluggishly to distance Marked Romberg symptom No patellar or Achilles reflexes Areas of analgesia Examination of the larynx disclosed a small tumor on the anterior surface of epiglottis, left side, which yielded to touch of probe Vocal cords were slightly congested On inspiration the right cord moved slowly outward to about half the normal distance The left moved a little more slowly than the right to about the same distance On phonation the cords did not approximate completely, leaving a small opening throughout the anterior three fourths In the posterior one fourth the opening was a little larger and was slightly triangular in shape

Since his entrance into the hospital, his pulse had varied from 84 to 120 The temperature from 98 F to 99 5 F At various times he complained of difficulty in breathing other than that produced by the spasmodic attacks More or less cough was present due to an almost continual irritation in the larynx and trachea ' At times he had pain in his throat independent of any efforts at swallowing What may be considered as characteristic of his condition was his extreme nervousness due to the ever present fear of an attack He slept very poorly Cleared his throat often The greatest number of attacks in any one day have been four, although before coming into the hospital he had had as high as seven Recently several days elapsed without any. Several attacks were produced by the irritating effects on the throat of the bromid solution he has been taking.

Objective Signs—The objective signs during a crisis were as follows Marked inspiratory dyspnea; interrupted stridor, expression of great fear, face suffused, eyes wide open and staring Referred to throat and precordium as seat of great distress This latter was not due to pain, as in an anginal attack, but to the inability to obtain sufficient air. The hand would be clasped about the throat as if in an effort to obtain relief from choking He walked about unsteadily on account of the vertigo which was present The pulse increased in rapidity and became irregular in quality. After an attack it was usually about 120 His face was pale, respirations were increased, and he was markedly agitated The attacks lasted from a few seconds to 15 minutes although in the latter instances the greatest intensity was usually for about 5 minutes

Laryngeal Appearance—In attempting to examine the larynx a crisis was produced As the laryngeal mirror was in position at this time an excellent opportunity was given to view the larynx The cords were fixed firmly in the position of phonation In spite of the violent inspiratory efforts there was not the least abduction This position was held for at least 15 seconds The small elliptical opening between the cords as described above was present and undoubtedly it was due to this factor that the stridor was interrupted The edges of the cords were seen to vibrate slightly, which demonstrated that a little air at least must be passing through the glottis Perhaps to this fact may be due the absence of the loss of consciousness which one would expect in a complete closure of the glottis and which occurred in his first attack. This evident involvement of the internal thyreo arytenoid seems to be due to the strain placed on these muscles by the severe inspiratory efforts, which has caused them to yield a little In other words it may simply be an effort to counteract the effects of the posticus paralysis With the recurrence of abduction of the cords the attack subsided, to immediately recur, as would happen at times, or to be held in abeyance for a variable length of time

At the present writing he has had no attack for the past eight weeks

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FORMALDEHYD DERIVATIVES.

THEIR FATE AND ACTIONS IN THE BODY TOGETHER WITH OBSERVATIONS ON SOME OTHER URINARY, INTESTINAL AND WOUND ANTISEPTICS.

*Report to the Council on Pharmacy and Chemistry.**

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I INTRODUCTION.

The consideration of certain proprietary "internal antiseptics" by the Council on Pharmacy and Chemistry revealed important discrepancies between the claims of the manufacturers and the results obtained by other investigators with analogous products. It appeared to me that a fair disposition of the questions thus raised could only be obtained by a direct experimental investigation, which I, therefore undertook I also believed it worth while to compare the antiseptic value of these products with those of the older and better known drugs. In the determination of the antiseptic value I have departed from the ideal, but highly artificial, conditions of the customary culture experiments, and have aimed to reproduce, so far as possible, the conditions under which the drugs are actually used. Exception may, of course, be taken to the application of any laboratory experiments to clinical problems; but until a clinical method of comparing antiseptic values is invented, it seems to me unwise to discard the positive and definite data obtainable under these artificial conditions.

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*From the Pharmacological Laboratory of Western Reserve University

*Because of lack of space the article as here published is a condensation of the original report, reprints of which may be obtained by application to the author.

II. THE LIBERATION OF THE ANTISEPTIC RADICLES IN PURE SOLUTION.

The claimed antiseptic qualities of most of these drugs are based on the assumption that they are decomposed in the body, with the regeneration of the formaldehyd, salicylate, or other active radicles. Before investigating the more complex problem, whether or not these decompositions occur in the body, I investigated the decompositions in simple solutions under the influence of reagents which are somewhat, but not much, more powerful than the conditions obtaining in the body. I am indebted to Dr. W. W. Williams for aid in these tests.

A. THE LIBERATION OF FORMALDEHYD IN PURE SOLUTIONS.

Method.—A knife point (about 0.05 gm.) of the substance was placed in test tubes with about 10 c.c. of water, 1 per cent. hydrochloric acid, or 1 per cent. sodium hydrate. The first set of tubes was boiled;[1] if a positive result was obtained, a second set of tubes was prepared and tested immediately after mixing. If the result was negative, a third set of tubes was allowed to stand at room temperature for an hour. In a few instances, tests were also made after the tubes had been kept at from 37° to 40° C. for varying periods.

Before testing, the solutions were filtered if they contained any undissolved material. Some of the solutions were too much colored to be suitable for the direct application of the Jorissen test. In these cases, 1 gm. of the substance was placed in a flask with 100 c.c. of the reagent and distilled, the first 50 c.c. (approximately) of the distillate being collected and tested.

The Jorissen test for formaldehyd was used throughout, applied as follows: About 10 c.c. of the solution were rendered distinctly alkaline with sodium hydroxid and if no marked change occurred, there was added a very little dry phloroglucin, or 2 c.c. of a 1 in 1,000 solution. A control test was always made with water, so that even a very slight positive reaction could be identified. The results are given in Table 2, where the apparent solubility is also noted.

Summary.—These results may be summarized as follows, in the order of readiness with which formaldehyd is liberated.

(1) Glutol contains considerable free formaldehyd (CH_2O) and an additional quantity is liberated by boiling, in all media; most strongly in the alkaline, less in the acid and least in the neutral medium.

(2) Citarin and novaspirin develop formaldehyd promptly, in all media, even in the cold. The reaction is greatest in the alkaline, less in the neutral and least in the acid medium. The citarin liberates the formaldehyd somewhat more readily.

(3) Hexamethylenamin and tannopin (see below) develop formaldehyd in all media, most in acid, less in neutral and least in alkaline. The reaction occurs slowly at room temperature, more rapidly at 37° C. and promptly on boiling.

(4) With iodomuth, tannoform and tannopin the lower temperatures could not be tried completely by our method on account of discoloration; on distillation, they all liberate formaldehyd as follows:

Iodomuth: Most with alkali, doubtful trace with acid, none with water.

Tannoform: Most with alkali, some with acid and water.

Tannopin: Most with acid, less with water, least with alkali.

However, Tannoform filtered cold gave the reaction at once in acid and especially in neutral solution, indicating that it contains some free formaldehyd.

Tannopin gave no reaction at once with water so that it contains no free formaldehyd; this is liberated in the cold, at once by hydrochloric acid, more slowly by water.

(5) Formidin, Guaialin, Sodi-forma-sal and Ur-a-sol: These do not liberate formaldehyd in any reaction, even on boiling or distillation.

B. THE SALICYLIC ACID TEST.

The manufacturers of several of these products cite a positive salicylic acid test in the urine or intestine as evidence of the decomposition of the molecule. Before this can be accepted as a proof, it must be investigated whether the compounds themselves do not give the ferric chlorid reaction. This was done in the experiments shown in Table 3. The disposition of the experiments was similar to that of the preceding section; the alkaline filtrates were neutralized and again filtered.

It is evident that all the products which are soluble give the test directly; the intensity of the reaction being practically proportional to the solubility. The positive outcome of the salicylate reaction can not, therefore, serve as evidence of decomposition since it is certainly given by the undecomposed products.

C. THE LIBERATION OF IODID.

Formidin and iodomuth contain iodin in the molecule, and the application of the iodid test might possibly serve as a means of recognizing decomposition. The experiments in Table 4 were made and show that formidin contains some free iodin; iodomuth does not contain this impurity. Dilute acid alone does not liberate iodin from either product; but the ordinary iodid test (dilute acid and nitrite) is positive with both, so that it can not be utilized to demonstrate a decomposition of these products.

III. THE LIBERATION OF THE ANTISEPTIC RADICLES BY PANCREATIC DIGESTION.

In the medicinal use of these drugs, any decomposition of compounds of this class would occur principally in the intestine, through the agency of the pancreatic juice, as has been shown by the researches of Nencki[3] and Lesnik[4]. This would indeed be the only possibility for the insoluble drugs; with those which are soluble, the possibility of decomposition elsewhere in the body must be reckoned with; but the decomposition by pancreatic ferment is certainly of prime importance. The method of digestion outside of the body was deemed by me preferable to the alternative method of introducing the drug into a ligatured loop of the duodenum of living animals. The decomposition would be the same in both methods; but the absence of decomposition products in living animals might be attributed to their absorption.

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[1] In "boiling" the solution, the temperature is merely brought to the boiling point and the tube plunged at once into cool water. The same method was used with the urines.

[3] Arch. f. exp. Path. u. Pharm., 1886, xx, 367.

[4] Arch. f. exp. Path. u. Pharm., 1887, xxiv, 167.

Several series of these digestive experiments were made, following closely the general methods of the authors just cited. The antiseptic effects were observed incidentally, but these will be described in a later section.

RESULTS.

The results are presented in Table 5. The corresponding results with pure watery solutions are added for comparison. These results indicate that pancreatic digestion does not decompose these drugs more readily than does water; the only exception to this rule are the saponification of salol, and, to a slight extent, of urasol. The fact that glutol is not decomposed is particularly striking; the pancreatic digest contained even less free formaldehyd than the watery solution. This was doubtless due to the evaporation of the free formaldehyd which is present in the original product.

TABLE 5.—Tests on the Pancreatic Digests.

	Tests on the Filtrate.				Tests on the Distillate.			Reaction of Distillate.	
	Series 1.	Series 2.	Series 3.	Pure Watery Solution.	Series 2.	Series 3.	Pure Watery Solution.	Series 2.	Series 3.
				A. Jorissen's Reaction for Formaldehyd.					
Control	Negative.	Negative.	Negative.	Negative.	Negative.	Negative.	Negative.	Neutral.	Strongly acid.
Hexamethylenamine	.....	.....	Trace.	Trace.	.....	Fair	(Fair)	.....	Neutral.
Tannopin	.....	Positive.	.....	Trace.	Positive	Good.	Positive	Acid	Strongly acid.
Formidin	Negative.	.....	Negative.	Negative.	.....	Very doubtful tr.	Negative.	.....	Slightly acid.
Ur-a-sol	Positive?.	Negative.	Negative	Negative.	Doubtful trace.	Negative.	Negative.	Neutral.	Slightly acid.
Sodi-forma-sal	Negative.	Negative.	Negative.	Negative.	Trace??	Good.	(Negative).	Neutral.	Fairly acid.
Iodomuth	.....	.....	.....	.....	.....	Negative.	Negative.	.....	Strongly acid.
Guaialin	Negative.	Negative.	Negative.	Negative.	Negative.	Negative.	(Negative).	Neutral.	Strongly acid.
Citarin	.....	.....	Fair.	Good.	.....	Good.	Good	.....	Strongly alkalin.
Novaspirin	.....	.....	Good.	Good.	.....	Good.	Good	.....	Acid.
Glutol	.....	.....	Negative.	Good.	.....	Trace.	(Good).	.....	Strongly acid.
Tannoform	.....	.....	.....	.....	.....	Fair	Positive	.....	Strongly acid,
				B. Ferric Chlorid Reaction for Salicylates.					
Control	Negative.	Negative.	.....	Negative					
Formidin	Positive.	.....	Fair	Positive.	.....	None.	None.		
Ur-a-sol	Positive.	Positive.	.....	Positive.	.....	Fair (winter-green odor).			
Sodi-forma-sal	Positive.	Positive.	.....	Positive.	.....	Trace?			
Guaialin	Negative.	.....	.....	Negative.					
Novaspirin	.....	.....	.....	Doubtful.	.....	Positive	(Positive on boiling).		
Salol	.....	Trace.	Strong	Negative.					
				C. Iodid Reaction.					
Formidin	.....	.....	Positive.	Positive.	.....	Negative.	Trace.		
Iodomuth	.....	.....	Positive.	Positive.	.....	Negative.	Negative.		

EXPERIMENTS ON OTHER TISSUES.

Intestine and liver were tried by the method of Series 1, with the same results as those found for the pancreas.

IV. EVIDENCE OF DECOMPOSITION FURNISHED BY THE URINE; EFFICIENCY AS URINARY ANTISEPTICS.

The absorption, and in some cases, the decomposition of these substances in the body might be demonstrated by the examination of the urine. Accordingly a considerable number of experiments were made, all on one person. The drugs used were: hexamethylenamin; tannopin; formidin; ur-a-sol; sodi-forma-sal; iodomuth; citarin; novaspirin; tannoform, and as controls: Salol; sodium salicylate, sodium benzoate, sodium phenolsulphonate, and boric acid; all in doses of 0.5 and 1.0 gm.

In addition to the chemical examination of the urines, their keeping qualities were determined by exposing them in the incubator. This approaches the conditions of cystic fermentation so closely that the conclusions may be transferred unhesitatingly to residual ammoniacal fermentation in the bladder. As to other cystic infections, the possibility of a specific susceptibility of pathogenic bacteria to selected antiseptics needs scarcely to be considered; first, because the claimed antiseptic radicles (formaldehyd and salicyl) are alike for all of these drugs; and second, because the observed differences in the antiseptic effects are so large that they would overshadow any individual actions.

The principal results are as follows: Hexamethylenamin rendered the urine strongly antiseptic; novaspirin, salol and sodium salicylate rendered it feebly antiseptic. None of the other drugs had any discernible effect on the keeping qualities of the urine.

The urine did not contain any free formaldehyd with any of the drugs. Formaldehyd was formed in the hexamethylenamin urine, but in none of the others. The formic acid excretion was not increased by any of the drugs (save possibly a trace with hexamethylenamin).

The urine furnished evidence that ur-a-sol, sodi-formasal, and novaspirin were absorbed, either as such or with decomposition; that iodomuth was absorbed to a slight extent only (with decomposition); that formidin was not absorbed; there was no definite evidence as to tannopin and tannoform.

The urine did not furnish any definite evidence of the decomposition of tannopin, formidin, ur-a-sol, sodi-forma-sal, citarin, novaspirin or tannoform; iodomuth was decomposed to a slight extent only.

The taste of ur-a-sol and sodi-forma-sal is markedly objectionable.

METHODS, EXPLANATIONS AND PROTOCOLS.

Doses.—It will be noted that the doses are generally the largest single doses which are advised therapeutically.

Collection of Samples.—The urine was collected continuously from two to three hours before taking the drug to five or six hours after taking, and again on the following day. An aliquot part of each sample was used for the qualitative and incubator tests, and the remainder was used for the formic acid determinations. All tests were controlled on the sample of urine collected before taking the drug.

Formaldehyd.—The Jorissen test was used throughout. It was applied directly to the urine, after momentary boiling and after standing in the incubator. The negative results of the direct test will not appear strange to any one acquainted with the chemical properties of formaldehyd. Blum, Pohl, Ebert and Grunelle[5] have already shown that even large quantities of formaldehyd, administered as such, do not reappear in the urine.

Salicylate.—The urine was acidulated with hydrochloric acid and dilute ferric chlorid added. When the test was negative the urine was boiled with the dilute acid and also with concentrated acid, and tested after partial neutralization. The direct test by the first method gave the best results.

Iodid.—The urine was acidulated with 25 per cent. sulphuric acid, a few drops of 1 per cent. sodium nitrite were added and the solution shaken with chloroform.

Bacterial Turbidity.—At the end of the day, from 50 to 100 c.c. portions of each sample were placed in small flasks, loosely stoppered and set in the incubator, which varied between 37 and 42° C. The control samples were always turbid on the following morning.

FORMIC ACID DETERMINATIONS.

Pohl[6] has shown that formaldehyd and methylene derivatives are (at least partly) oxidized into formic acid in the body, and formic acid is excreted (in part) unchanged in the urine, provided the quantity exceeds a certain minimum. This minimum is about 1 gm. for a 7 kilo dog—its amount has not yet been determined for man. Smaller quantities are oxidized completely. The larger part of the formaldehyd also underwent complete oxidation. Since corresponding experiments on man have not been recorded, it was not altogether impossible that some of the methylene of these compounds might be excreted as formic acid, so that the determination of this substance might serve as an index of their decomposition. I am indebted to Dr. J. D. Pilcher for these determinations.

The method described by Pohl[7] was used, always neutralizing with lime water. We can confirm his observations that this expedient gives reliable results in the presence of formaldehyd. The determinations were made in duplicate, using from 100 to 300 c.c. of urine for each test, and averaging the results.

Since a somewhat variable quantity of formic acid is excreted normally, it was necessary to make control estimations. Instances of these are given. In over thirty determinations, the normal quantity of sodium formate in the urines of the first period of the day (i. e., between 6:30 and 10 a. m.) varied from 0.28 to 3.37 mg. per 100 c.c.; mean 1.25 mg.; and from 0.6 to 4.58 mg. per hour, mean equals 2.25 mg. In the second period of the day (i. e., between 9 a. m. and 4 p. m.) it varied between 0.12 and 3.86 mg. per 100 c.c., mean equals 1.5 mg.; and from 0.19 to 6.31 mg. per hour, mean equals 1.90 mg. In calculating the "normal excretion" 2 mg. an hour was taken as a basis. The theoretically possible quantity was calculated on the assumption that all the methylene (CH_2) groups of the drug were excreted as sodium formate ($NaCO_2H$). It will be seen that the excretion of formic acid after these drugs remained within the normal limits, and certainly did not correspond to the quantity which could be formed from the drugs. Since such drugs as citarin are certainly absorbed and decomposed in the body, the results prove that the oxidation of medicinal quantities of the methylene radicle is complete in the human organism, and does not give rise to the excretion of either formaldehyd or formic acid.

An abstract of the protocols for the individual drugs is herewith submitted, followed in each case by the conclusions which seem to me justified.*

CONCLUSIONS.

A considerable part (if not all) of the hexamethylenamin is excreted unchanged, the excretion starting within eleven minutes and being completed, with single doses, in 5 hours.

A part of the hexamethylenamin of the urine is converted into formaldehyd outside of the body. This takes place to a slight extent only, at room temperature, much more extensively at body temperature, but even then the conversion is so slow that it is not completed in three weeks, when fairly large doses have been taken. The formic acid excretion shows a very slight, somewhat doubtful increase; at most an insignificant portion of the drug is excreted in this form. The urine, containing hexamethylenamin, resists bacterial fermentation indefinitely; it is not quite so resistant to the growth of molds and algæ.

The urine, after taking tannopin, does not contain it, nor any of its decomposition products. The urine is not antiseptic.

Neither formidin nor any of its decomposition products are found in the urine. Considering the delicacy of the iodid and salicylate reactions, it is apparent that no appreciable amount can have been decomposed or absorbed from the intestine.

Some of the urasol is absorbed and excreted, either as such or after decomposition; it could not be decided which. The quantity excreted is not sufficient to act antiseptically on the urine. The taste is seriously objectionable.

Sodi forma sal behaves like urasol.

An insignificant trace of iodid was split off and absorbed. There is no evidence of further decomposition. There is no antiseptic action on the urine.

Neither citarin, formaldehyd nor formic acid is excreted in the urine; this has no antiseptic qualities. The urine was alkaline in the first experiment, but not in the other two experiments.

The appearance of salicylate in the urine proves that some novaspirin has been absorbed either as such or with decomposition. Since novaspirin itself liberates formaldehyd readily, while no formaldehyd can be liberated from the urine, it appears that the methylene group has been split off and altered. Since there is no additional formic acid in the urine, this substance can not be the end product of the reaction.

One of the urines was fairly antiseptic, the other not.

The urine after tannoform does not contain formaldehyd or formic acid, nor is it antiseptic.

THE "OLDER URINARY ANTISEPTICS."

The following substances were used to control the preceding observations:

Salol is absorbed and excreted, after cleavage. The urine is but slightly antiseptic.

Sodium salicylate renders the urine slightly antiseptic.

Sodium benzoate did not render the urine antiseptic.

Sodium phenolsulphonate did not render the urine antiseptic.

Boric acid did not render the urine antiseptic.

I. ANTISEPTIC ACTION AS TESTED ON PUTREFYING PANCREAS AND BLOOD.

EFFICIENCY AS INTESTINAL AND WOUND ANTISEPTICS.

As has been previously explained, I aimed to use methods which would approximate the conditions of the body more closely than the ordinary culture tests. I have been rather surprised at the reliability of these rough methods.

The results of the urine tests have already been detailed. For estimating the usefulness of intestinal antiseptics, I utilized the retardation of pancreatic putrefaction. The pronounced odor renders this method peculiarly satisfactory. The saponifying action of the pancreas reproduces the intestinal liberation of the guarded antiseptic radicles, which (as in salol) forms the basis of most of the synthetic intestinal antiseptics.

The transference of these results to clinical conditions requires some judgment. A soluble and irritant substance of high antiseptic power might be clinically inferior to a weaker but insoluble and non-irritant antiseptic. Side actions, such as those of bismuth, tannin or salicyl might be clinically desirable or otherwise. These irritant or specific side actions are so well known that I need scarcely point them out. A more serious matter is that my observations are confined to putrefactive organisms, but this criticism is again obviated by the fact that the antiseptic radicles are identical in nearly all of these products, so that specific susceptibility need not be seriously considered.

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[5] Heffter: Ergebnisse d. Physiol., 1905, iv, 219.
[6] Arch. f. exp. Path. und Pharm., 1893, xxxi, 281.
[7] Loc. cit., pp. 285 and 292.

*Only the conclusions are printed in this abstract. The protocols are contained in the reprints.

For judging the usefulness of these drugs as tissue or wound antiseptics, I observed the effect on the putrefaction of the blood. The odor in this method is less pronounced, but sufficiently distinctive. I have more hesitation in transferring the results obtained with blood, directly to the clinical conditions of wound infection, not only because the bacterial organisms are so markedly different, but also because any direct effects on the inflammatory process are clinically so vastly important. The conclusions in this case are, therefore, mainly suggestive.

RETARDATION OF PANCREATIC PUTREFACTION (USEFULNESS AS INTESTINAL ANTISEPTICS.

The method is that previously described. The results are shown in Table 6. The efficiency of sodium benzoate and sodium salicylate, of creosote, and of bismuth subnitrate, are especially remarkable. The relative inefficiency of citarin, glutol, guaiacol carbonate, and even of salol, are equally surprising. The partial efficiency of those methylene products, which the chemical tests showed to be undecomposed, is evidently due to the action of the original substances, and not to the liberation of formaldehyd.

TABLE 6—RETARDATION OF PANCREATIC PUTREFACTION.

A—*Putrefaction prevented.*	Odor.
Sodium salicylate ..	More after 4 days in incubator and 3 days at room temperature.
Sodium benzoate	
Creosote ...	
Bismuth subnitrate .	
Novaspirin .	None after 4 days in incubator (urasol has a slight wintergreen odor).
Urasol . .	
Hexamethylenamin ...	
B—*Putrefaction retarded* (in descending order).	
Tannoform . .	Very slightly putrid in 3 days
Sodii formal sal .	Very slightly putrid in 2 days
Iodomuth	Very slightly putrid in 1 day (does not increase).
Formidin	Slightly putrid in 1 day, more marked in 4 days
Salol	Slightly putrid in 1 day, more marked in 3 days
Guaiacol carbonate ..	Slightly putrid in 1 day, more marked in 2 days
Tannopin	Slightly putrid in 1 day, very putrid in 2 days.
Glutol	
Gurialin	Markedly putrid in 1 day, very putrid in 2 days
C—*Putrefaction not retarded*	
Citarin	Equally putrid in 1 day.
Water	

PUTREFACTION OF BLOOD (USEFULNESS AS WOUND ANTISEPTICS.)

Duplicate samples, each of 15 c.c. of fresh defibrinated beef blood and 0.2 gm. of the drugs, were kept in stoppered test tubes at about 40°C. from the morning of February 10 to the evening of February 17, being observed at the end of 2, 4, and 7 days. The tubes to which no drug was added were slightly putrid and of a garnet color at the end of 2 days. The odor was more marked in 4 days and remained about the same at 7 days.

The antiseptic effect is shown in Table 7. The succeeding tables show the associated effects on the color of the blood. The relative inefficiency of glutol is again remarkable. On the other hand, the efficiency of iodoform, boric acid, and bismuth are worthy of notice.

As regards bismuth subnitrate, I have frequently encountered the statement that it should not be used on delicate surfaces, because the sharply pointed crystals, of which it consists, must render it irritant. This seems to be purely theoretical. and would, of course, hold only if the crystals possessed some degree of hardness. As a matter of fact, it is easy to convince oneself to the contrary by dusting a little of the powder into the conjunctival sac. Delicate as this is to any mechanical irritation, the subnitrate causes absolutely no pain.

TABLE 7—PUTREFACTION OF BLOOD.

A—*Prevented completely*	Odor.
Boric acid ...	None in 7 days.
Iodoform	
Quinine sulphate . .	
Betanaphthol .	
Xeroform ..	
B—*Almost completely prevented.*	
Bismuth subnitrate	None in 4 days, very faint in 7 days.
Acetanilid .	
Orphol . . .	
Formidin . .	No odor in 2 days, slightly putrid in 4 days, not more in 7 days
Urasol .. .	
Iodomuth .	
Chloretone	
C. *Putrefaction delayed.*	(That is the odor developed more slowly but in the end was pronounced, although not as strong as in the next class)
Glutol	None in 2 days, slightly putrid in 4 days; markedly putrid in 7 days
Guaiacol carbonate .	None in 2 days, marked in 4 days.
Tannoform .	
Tannopin .. .	
Tannin	Slight in 2 days, marked in 7 days
Salol	Slight in 2 days, marked in 4 days
D—*No antiseptic action.*	(The odor in 2 days is as pronounced as in the control tubes).
Calcii carbonas.	
Carbo Ligni	
Cerii oxalis	
Zinci oxidum.	

II.—*DISCUSSION OF THE INDIVIDUAL PRODUCTS.*

It will be interesting to compare the results of these experiments with those of other investigators, and from the standpoint of the Council, especially with the claims and statements of the manufacturers of the several products.

HEXAMETHYLENAMIN.

This substance was introduced into medicine mainly through A. Nicolaier,[8] after careful chemical, physiologic and clinical studies. His results are in complete agreement with mine; except that I am not completely satisfied but that the substance as such may have some antiseptic action. The main results are that the substance is absorbed and excreted promptly and mainly unchanged; that it liberates formaldehyd readily but slowly and persistently under the conditions of the body and urine; that it is the urinary antiseptic par excellence, vastly surpassing all the other substances tried; that it is not quite so effective as other preparations against molds; that it also prevents pancreatic putrefaction, although its prompt absorption would probably preclude its use as an intestinal antiseptic. My experiments did not bear on the reported diuretic and urate-solvent properties.

TANNOPIN.

This is recommended as an intestinal astringent and antiseptic, passing unchanged through the stomach, but slowly developing in the intestine the actions of tannin and formaldehyd. It is also claimed on the authority of E. Schreiber[9] that some of the hexamethylenamin passes unchanged into the urine.

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[8] Deutsche Archiv. Clin. Med., 1899, xxxiii.

My results indicate that it is probably acted on to some extent in the stomach. No trace of it could be discovered in the urine, which was not rendered antiseptic. The pancreas and the blood experiments would assign to it a very low value as intestinal antiseptic; they give no information as to its astringent action.

FORMIDIN.

I have not seen the advertising literature for this product, so that I shall merely quote my conclusions:

The substance contains methylene, salicyl, and iodid groups. These are not liberated by water, dilute acid or alkalies, or distillation. (This agrees with the observations of Zernik and Puckner). It contains a small quantity of free iodin as impurity; it was not decomposed by pancreatic digestion. This negative result of the salicylate and iodid tests in the urine proves definitely that formidin was not absorbed and therefore, *that it was not decomposed in the human intestine.* It had only a slight retarding action on pancreatic putrefaction, and a somewhat stronger action on the putrefaction of blood.

Formidin is an inferior wound and intestinal antiseptic; it is not a urinary antiseptic.

It may be fair to add that the manufacturers, in a letter to the secretary of the Council, submit evidence that relatively enormous doses of formidin, when confined in a ligatured intestine, may sometimes be decomposed to a slight extent. The description of the experiments was not very detailed, nor could they materially affect the above conclusions.

FORMA-SAL COMPOUNDS.

The Organic Chemical Company markets under this *group-name various salts of methylene disalicylic acid.* In regard to them, the circulars of the company *remark*:

"The demerits of salicylic acid which cause its disuse—the positive irritation to all mucous membranes; that awful sense of rawness and burning in the stomach, along with a disgusting nausea . . . are absent in the Forma-sal Compounds." I have found both ur-a-sol and sodi-forma-sal pronouncedly and persistently nauseating.

The advertisements claim that formaldehyd is gradually split off, and acts as a urinary antiseptic and uric acid solvent. I have found no evidence that formaldehyd is split off, and the compounds have no discoverable antiseptic action on the urine. This agrees with Frankel's statement.[10]

It is claimed that these compounds are superior to other salicylates in rheumatism. Since they are to some extent absorbed, it is quite possible that they produce some of the actions of salicylates; but I can discover no grounds for the claimed superiority. The claim that "they are the most valuable salicylic acid compounds known" must be stamped as a gross exaggeration, to say the least.

Ur-a-sol might serve as a fair intestinal and wound antiseptic, but would be inferior to other and much cheaper drugs, such as bismuth subnitrate.

In a letter to the Council, the manufacturers state that the urine, after taking ur-a-sol, gives the iron reaction for salicylates. This assertion is correct. But the conclusions which they draw from it, namely, that formaldehyd has been liberated, are absurd since the undecomposed methylene disalicylic acid gives the same reaction. Since the manufacturers mention iron as an incompatibility of the drug, they must have been perfectly familiar with this fact. A letter addressed by the secretary to the chemist to whom the statement was attributed, sent several months ago, has remained unanswered.

IODOMUTH.

This substance is advised as a wound powder and intestinal antiseptic. The advertisement reads in part as *follow*:

"Appreciating the sedative and healing properties of bismuth, in union with the desiccating properties of gallic acid, we added to them the antiseptic properties of formaldehyd and the alterative and stimulating properties of iodin and created *the* healing agent."

This implies that the various constituents are liberated on the *local application of the powder*, and this is further and more specificially stated in other advertisements.

The experiments show that these constituents are not liberated to any marked extent under the conditions of the body; and while the drug may serve as an intestinal antiseptic and as a wound powder, it is in both respects inferior to the cheaper bismuth subnitrate.

GUAIALIN.

This is advised as an internal, intestinal and urinary antiseptic in tuberculosis, typhoid, etc. It is stated that its absorption into the blood inhibits the multiplication of pathogenic bacteria. Its decomposition into benzoic acid, formaldehyd and guaiacol is implied, rather than directly stated.

My experiments fail to show any evidence of such decomposition. As an intestinal antiseptic it would be nearly useless; and as it is probably not absorbed, the possibility of its being an internal or urinary antiseptic is too remote for serious consideration.

CITARIN, NOVASPIRIN AND SIMILAR PRODUCTS.

Anhydromethylene citric acid is marketed in the form of its sodium salt (citarin); urotropin salt (helmitol or urotropin-new), and salicylic ester (novaspirin). These are rapidly decomposed, when in aqueous solution, with the formation of formaldehyd. This change must necessarily occur also in the body.

In the case of citarin, the manufacturers claim that the formaldehyd thus liberated dissolves uric acid in the body, even to the extent of dissolving the uratic tophi of gout! Citarin is, therefore, advertised as an "Anti-Lithemic" in gout, chronic rheumatism, etc. No claims are made for it as an antiseptic. With urotropin-new, however, the methylene was credited with the transmissions of formaldehyd to the urine. Nicolaier,[11] however, successfully challenged this claim and showed that the antiseptic effect on the urine was due solely to the urotropin part of the compound. As a result, I understand that this compound has now been withdrawn from the market.

In the case of novaspirin, no action is attributed to the anhydromethylene-citric acid, beyond that of delaying the absorption of the salicyl radicle. It is classed by the manufacturers purely as a salicyl product.

My experiments do not bear on the urate solvent properties of citarin, nor on the proclaimed superiority of novaspirin over other salicylic esters. The taste of novaspirin is certainly an improvement on that of the forma-sal products. Its excretion is certainly slower than that of sodi-forma-sal, but does not differ materially from that of ur-a-sol or salol. Both citarin and novaspirin tend to render the urine alkaline, after the manner of citrates, which may in part account for an antirheumatic action.

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[9] Deutsch. med. Wchnschr., 1897, No. 49.

[10] Arzneimittel Synthese, 2nd edition, p. 293. "Während Methylensalicylsäure im Organismus keine Formaldehyd abspaltet, sondern unveraendert im Harn erscheint, . . ."

[11] Deutsch Arch. f. klin. Med., 1906, v. 89, p. 170.

Although formaldehyd is so readily liberated from the products, it does not seem to exert any antiseptic action, presumably because it is instantly bound by the alkali. Citarin had the weakest antiseptic action on the putrefying pancreas, of all the products studied. It was entirely inactive, so far as the urine is concerned. This failure of antiseptic action makes me feel somewhat skeptical as to the claimed urate-solvent action. The novaspirin was markedly antiseptic to the pancreas, and slightly so to the urine; but this action is evidently referable entirely to the salicyl component.

GLUTOL.

This is advised as a wound antiseptic, with the claim that it is itself inactive, but is decomposed by living cells with the continuous liberation of minimal quantities of formaldehyd. Its mechanism of action would therefore be similar to that of hexamethylenamin, but its insolubility would assign to it a very different field of usefulness. My experiments show the following:

Glutol contains some free formaldehyd and a further quantity is liberated in all media. The amount of this free formaldehyd is probably not sufficient to be a serious objection to its use. Pancreatic digestion does not split off a materially greater amount. Since this process is analogous to the digestion by living cells, the specific liberation of formaldehyd by the latter seems somewhat doubtful. The quantity liberated by pancreatic digestion is not sufficient to markedly check putrefaction, the glutol being inferior as a preservative to nearly all the other substances which were tried. Its efficiency on the blood was also poor.

While glutol may be more or less useful in the conditions in which it is advised, the claimed superiority over antiseptics is not borne out by my experiments. It would be distinctly inferior to iodoform, boric acid, or bismuth subnitrate.

TANNOFORM.

This is advised externally as a siccative, antiseptic and deodorant, and also as an intestinal antiseptic—presumably on the assumption that it liberates its two components.

My results indicate that it would be decomposed to some extent in the stomach, better in the intestine; that the urine is not rendered antiseptic; that it is a fairly efficient intestinal and wound antiseptic, superior to tannopin in both respects. I can say nothing as to its astringent action.

ORPHOL AND XEROFORM.

Orphol (betanaphthol-bismuth) is advertised as an intestinal antiseptic and astringent; xeroform (tribromphenol-bismuth) as an iodoform substitute, and also as an intestinal antiseptic. My experience with both is confined to the observation on the preservation of blood. In this respect, xeroform proved the equal of boric acid, iodoform and betanaphthol; orphol was but little inferior, equalling bismuth subnitrate and acetanilid. While both products would doubtless accomplish the purposes for which they are advised, my experiments do not show any evidence of their superiority over the other products.

VII. GENERAL CONCLUSIONS.

1. The methylene radicle is transformed very readily into formaldehyd with some compounds; much more difficultly or not at all with others.

2. The formaldehyd thus liberated is completely oxidized in the human organism and does not exert any antiseptic action on the urine.

3. Formidin is neither decomposed nor absorbed to any appreciable extent in the intestine.

4. Hexamethylenamin is the only reliable urinary antiseptic (by mouth) of the various substances tried. The salicylates (sodium salicylate, salol, novaspirin) have a distinct, but much inferior, preservative effect. The following are practically useless: Boric acid, citarin, formidin, iodomuth, sodi-forma-sal, sodium benzoate and sodium phenolsulphate, tannoform, tannopin and ur-a-sol.

5. As intestinal antiseptics, the most efficient drugs appear to be bismuth subnitrate and creosote, (also novaspirin and ur-a-sol). These are closely approached by tannoform and iodomuth. Distinctly inferior are formidin, salol, guaiacol carbonate, tannopin and glutol. Guaialin appears nearly useless.

6. As relatively insoluble wound powders, the greatest antiseptic power appears to be possessed by betanaphthol, boric acid, iodoform, quinin sulphate and xeroform. These are closely approached by acetanilid, bismuth subnitrate and orphol. Somewhat inferior are chloretone, formidin, iodoform and ur-a-sol. Distinctly inferior are glutol, guaiacol carbonate, tannoform, tannopin, tannin and salol. Not antiseptic are cerium oxalate, charcoal, chalk and zinc oxid.

7. Of all the products examined for antiseptic value, hexamethylenamin is the only one which offers undoubted advantages over the older antiseptics. This statement is not intended to reflect on the antirheumatic value of the salicylic products, or on the astringent value of the tannin products.

SERUM DIAGNOSIS OF SYPHILIS.*

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The investigations of Bordet and Gengou first directed attention to the possibility of determining the presence of antibodies by an indirect method known as complement deviation. By this means not only could bacterial antibodies be determined, but likewise their corresponding antigen. (The latter term is applied to any bacterium or substance which, when injected into an organism, gives rise to the formation of an antibody.)

It was found by this method that organ extracts, albumins, peptones, etc., produce antibodies, and that this could be shown *in vitro* by bringing together the antigen and its corresponding antibody in the presence of complement. The anchoring of complement was demonstrated by failure of hemolysis to occur in an added inactivated hemolytic system.

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* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

Wassermann and Bruck used this method to show the presence of bacterial substances in organ extracts and corresponding antibodies in sera of patients immunized against them. They employed this method with considerable success in typhoid, tuberculosis and meningitis epidemica.

It occurred to Wassermann that this principle might be applied to demonstrate antibodies in the sera of syphilitics. With this in mind he, with Neisser and Bruck,[1] began a series of investigations.

Their first experiments were made with monkeys. They obtained immune sera by injecting into monkeys extracts of syphilitic organs or lesions procured from syphilitic monkeys or human beings. They afterward mixed the immune serum of the prepared monkey with the extract of syphilitic organs obtained from a dead luetic new-born, added complement, and found that in many instances a fixation of complement occurred, whereas it did not occur when mixed with similar extracts of normal organs nor when normal serum was mixed with syphilitic or normal organ extracts.

They looked on this as a means of demonstrating *in vitro* syphilitic antibodies in the blood serum and syphilitic substances in the organs of luetics.

The first clinical application of this method was reported by Detre,[2] who found specific antibodies in the blood of two out of six luetics he examined.

The examination of 257 specific cases in the dermatologic clinic of Breslau reported by Neisser, Bruck and Schucht[3] showed positive results in only 19 per cent. Their experiments were conducted also with a view of demonstrating antigen, which they found in extracts of blood corpuscles of luetics in a much larger percentage.

The above results have never been quite clear, as they were entirely out of accord with the results of all other investigations and likewise of Bruck's[4] later work in company with Stern.

Wassermann and Plaut[5] examined the spinal fluid of forty-one progressive paralytics and obtained a positive reaction in 78 per cent; nineteen controls, whose spinal fluid was examined, all gave negative results.

Schutze[6] examined twelve tabetics and found antibodies in the spinal fluid of eight. Morgenroth and Stertz[7] obtained a positive reaction with the spinal fluid of eight paralytics and a negative reaction with the lumbar fluid of eight control cases.

Marie and Levaditi[8] confirmed the findings of Wassermann and Plaut by reporting a positive reaction with the spinal fluid of 73 per cent. of thirty-nine paretics, four out of five tabetic paralytics, and two out of four tabetics. They had negative results in a number of controls among cases with diseases of the nervous system not depending on syphilis.

These investigations served to clinch the etiologic association of progressive paralysis and tabes with syphilis.

Although Wassermann first believed this test to be a reaction between luetic antibodies and syphilitic substances contained in the luetic organ extract, it became evident to those working with the reaction that this was not the case.

Attention was attracted to this by Marie and Levaditi, and confirmed by Fleischmann, Michaelis and others. Levaditi observed that with normal liver extract some delay in hemolysis occurred and that when the normal extract was used in larger quantities a strong anticomplement reaction occurred. A parallel anticomplement reaction was not noticed when the luetic and normal extracts were used in the same proportions.

Levaditi, however, considered the reaction, in view of his negative results in control cases, specific for syphilis.

Weil,[9] following the observation of Levaditi, attacked the specificity of the test. He experimented with extracts of tumors (sarcomas) which he used instead of luetic liver extract, and obtained a positive reaction with syphilitic sera, the same as had been obtained with extracts of normal organs when used in similar quantities. Kraus asserted that he, with Volk, had reported this observation with regard to normal organ extracts before Levaditi.

Michaelis[10] confirmed the work of Levaditi, and held the reaction specific for syphilis.

Landsteiner, Müller and Pötzl,[11] in their investigations, used extracts of guinea-pig liver as antigen. They compared the results of this in the reaction with luetic liver extract and found that they coincided.

Since it has become clearly evident that the active constituents of the extracts concerned in the reaction do not consist of luetic substances, to-wit, *Spirochaeta pallida* of Schaudinn, numerous experiments have been made and are still going on to determine their identity.

Wassermann,[12] with Porges and Meier, Landsteiner, Müller and Pötzl,[13] Levaditi and Yamanouchi,[14] independently of each other, made extracts of syphilitic and normal liver with alcohol and found that such extracts contained the antigen and served for evoking the reaction. Landsteiner used alcoholic extracts of guinea-pig heart and showed that results were obtained similar to those obtained with luetic liver extract.

This observation of Landsteiner, Müller and Pötzl is of great practical importance and will prove of immeasurable advantage in promoting the use of the Wassermann reaction because of the readiness with which guinea-pig's heart can be secured and prepared.

In view of its solubility in alcohol, Wassermann thought that the active constituent must be closely allied to the lipoid bodies. With this in mind, Porges[12] and Meier, under Wassermann's direction, experimented with lecithin and, in fact, found that it caused a deviation of complement with luetic sera.

This has led to investigations with other substances, cholesterin, glycogen, sodium taurocholate and glycocholate, vaselin, etc.

Levaditi found lecithin and the sodium salts of the bile acids to work satisfactorily. Fleischmann[15] found cholesterin more satisfactory, compared with the luetic liver extract, than the lecithin.

I have employed both lecithin and cholesterin, using guinea-pig heart extract as control in the reaction with luetic sera. My experience is as follows:

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[1] Wassermann, Neisser and Bruck: Deutsch. med. Wchnschr., 1906, xxxii, 745.

[2] Detre: Wien. klin. Wchnschr., 1906, xix, 619.

[3] Neisser, Bruck and Schucht: Deutsch. med. Wchnschr., 1906, xxxii, 1937. Wassermann, Neisser, Bruck and Schucht, Ztschr. f Hyg., xlv, 45.

[4] Bruck and Stern: Deutsch. med. Wchnschr., 1908, xxxiv, 459.

[5] Wassermann and Plaut: Deutsch. med. Wchnschr., 1906, xxxii, 1769.

[6] Schutze: Berl. klin. Wchnschr., 1907, lxiv, 126.

[7] Morgenroth and Stertz: Virchow's Arch. f. path. Anat., 1907, clxxxviii, 166.

[8] Marie and Levaditi: Ann. de l'Inst. Pasteur, 1907, xxi, 138.

[9] Weil: Wien. klin. Wchnschr., 1907, xx, 527.

[10] Michaelis, L.: Berl. klin. Wchnschr., 1907; lxiv, 1103.

[11] Landsteiner, Müller and Potzl: Wien. klin. Wchnschr., 1907, xx, 1565.

[12] Wassermann: Berl. klin. Wchnschr., 1907, lxiv, 1599.

[13] Landsteiner, Müller and Potzl: Wien. klin. Wchnschr., 1907, xx, 1564.

[14] Levaditi and Yamanouchi: Compt. rend. Soc. de biol., 1907, lxii, 741.

[15] Fleischmann: Berl. klin. Wchnschr., 1908, lxv, p. 490

I examined eleven syphilitic sera with extract of guinea-pig heart and with lecithin. Eleven were positive with the extract and ten with lecithin. The intensity of the reaction with the same serum varied somewhat as between the extract and lecithin. In six the reaction resulted alike. In two the reaction with extract was more marked and in two more marked with lecithin.

Seven syphilitic sera were examined with both extract of guinea-pig heart and cholesterin. Seven were positive with extract and six with cholesterin. The result of reaction was alike with both in four cases. In two cases the extract gave a more marked reaction than cholesterin.

In the search for the active chemical constituent of the extracts Sachs and Altmann[17] used sodium oleate as antigen and obtained positive reactions with syphilitic sera. Continuing their experiments, Sachs and Altmann[18] found that they could prevent the reaction between luetic sera and alcoholic extract of luetic liver by the addition of an appropriate dilution of sodium hydrate, and likewise in some instances could convert a negative reaction between normal sera and luetic extract into a positive reaction by the addition of properly-diluted hydrochloric acid. They came to the conclusion that either syphilitic sera differentiate themselves from other sera by a lessened alkalinity, or that (which they considered more likely) the special quality of the syphilitic sera is to be sought in another factor, for the reaction of which, with the lipoids, the diminished alkalescence is necessary.

Following close on the experiments with lecithin as antigen in the syphilis reaction, Porges,[19] in company with Meier, worked out a modification of the serum diagnosis for syphilis. They found that luetic or metaluetic sera precipitated lecithin from solution. The test consists in mixing equal parts of a 0.2 per cent. suspension of lecithin in distilled water and serum of a suspected patient in a test-tube and incubating for five hours. If it is a syphilitic serum, a flocculent precipitate forms. Kraus, in discussing the subject at the time, asserted that the specificity of the Porges test was supported by the experiments of Eisler. Nobl and Arzt[20] shortly thereafter published their results of the Porges reaction. They examined eighty-three cases and found a positive reaction in 81 per cent. of them.

Fritz and Kren's[21] investigations of the Porges reaction showed that while it was positive in 63 per cent. of fifty-one cases of manifest syphilis, it was also positive in 65 per cent. of seventeen cases of tuberculosis of the lungs and skin that they examined. Using sodium glycocholate in place of lecithin in twenty-six cases of syphilis they obtained positive results in 65 per cent., while they obtained only 18 per cent. of positive reactions with this salt in tuberculosis.

The complete shattering of the specificity of this test is found in the report of Eisler,[22] whose results Kraus[23] had apparently misinterpreted when he quoted them as sustaining the specificity of the Porges reaction. Eisler reports that precipitating and non-precipitating animal sera give the lecithin but not the Wassermann reaction, and that sera of tuberculosis cases give it in about the same proportion as cases of syphilis.

Porges and Meier[24] have recently published the results obtained in the examination of 100 syphilitic sera by means of the watery extract, the alcoholic extract of luetic liver, the lecithin suspension and by their method of precipitation with lecithin. They found the results of the lecithin reaction to run parallel to those obtained by the complement fixation method.

Another modification in the serum diagnosis of syphilis was presented by Klausner,[25] who reported that on mixing one part of serum with three of distilled water and allowing it to stand at room temperature a flocculent precipitate formed in from one to fifteen hours.

In a subsequent report by Klausner[26] he states that in his controls he obtained positive reactions in five severe lupus cases, five typhoid cases and three cases of pneumonia. The reaction depends on the precipitation of globulin which is increased in infectious diseases. It would seem to lack specificity for syphilis.

Parallel tests carried out by me with the Wassermann, Porges, and Klausner reactions gave the following results in nine cases of syphilis:

	+	—
Wassermann reaction	9	0
Porges	6	3
Klausner	2	7

Although we are apparently closer to a solution of the theoretic basis of the Wassermann reaction, any final statement at this time would seem, from the experimental results so far recorded, unwarranted.

It would appear from the evidence at hand that there is some substance in the sera of syphilitics not contained in non-syphilitic sera which has an avidity for certain substances contained in luetic and normal organs, and also in guinea-pig organs, and for certain lipoid bodies, as lecithin, cholesterin, etc. (Wassermann).

After this extended consideration of the development and theoretic basis of the serum reaction I shall take it up in its practical aspect.

The specificity of the test is a matter of paramount importance from a practical standpoint. Fortunately the statistical proof now before us from different and reliable sources is sufficient to establish the specific character of the reaction.

In practically every case the controls examined by various investigators have proved negative. Even Weil, who attacked the specificity of the reaction in the first instance, and later with Braun the specificity of the antigen, was not able to secure the reaction with non-syphilitic sera. At the same time their results with syphilitic sera bespeak its specificity.

Following are some of the results of examinations recorded:

DETRE[5] obtained positive reactions with the sera of 2 out of 6 luetics.

WASSERMANN AND PLAUT[6] examined the spinal fluid of 41 paralytics; 78 per cent. of the reactions were positive. They also examined 19 controls; findings all negative.

MORGENROTH AND STERTZ[7] examined the spinal fluid of 17 paralytics and metasyphilitics; 53 per cent. of the reactions were positive; in the spinal fluid of 8 controls, the findings were negative.

MARIE AND LEVADITI[8] examined the spinal fluid of 39 progressive paretics; 74 per cent. of the reactions were positive;

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17. Sachs and Altmann: Berl. klin. Wchnschr., 1908, lxv, 494.
18. Sachs and Altmann: Berl. klin. Wchnschr., 1908, lxv, 699.
19. Porges: Wien. klin. Wchnschr., 1908, xxi, 206.
20. Nobl and Arzt: Wien. klin. Wchnschr., 1908, xxi, 287.
21. Fritz and Kren: Wien. klin. Wchnschr., 1908, xxi, 386.
22. Eisler: Wien. klin. Wchnschr., 1908, xxi, 422.
23. Kraus: Wien. klin. Wchnschr., 1908, xxi, 206.
24. Porges and Meier: Berl. klin. Wchnschr., 1908, lxv, 731.
25. Klausner: Wien. klin. Wchnschr., 1908, xxi, 213.
26. Klausner: Wien. klin. Wchnschr., 1908, xxi, 363.

in 5 tabetic paralytics, 80 per cent. of the reactions were positive.

Citron[27] examined 108 cases of evident or suspected syphilis; 74 per cent. of the findings were positive.

Fleischmann and Butler[28] examined 41 syphilitics and suspected luetics; in 70.7 per cent. of the cases the findings were positive.

Michaelis[19] examined 12 cases of certain and suspicious lues; 75 per cent. of the reactions were positive; of 23 controls, 2 reactions were positive.

M. Wassermann and Meier[29] examined 39 suspicious cases; 69 per cent. of the reactions were positive.

Schutze[6] examined 12 cases of tabes; 75 per cent. of the reactions were positive.

Fischer and Meier[30] examined 114 syphilitics; 83.7 per cent. of the reactions were positive.

Meier[31] examined 118 cases of lues; 81.7 per cent of the reactions were positive; in 21 controls all the findings were negative.

Kroner[32] examined 40 cases of suspected lues; 75 per cent. of the reactions were positive; in 10 controls all the findings were negative.

Mühsam[33] examined 80 cases; obtained positive results in 48. All of the latter proved syphilitic by examination or as the result of treatment.

Karewski[34] examined 18 suspected cases; the reactions were all positive.

Weil[9] examined 9 luetics; 88 per cent. of the reactions were positive.

Weil and Braun[35] examined 15 metasyphilitics; 80 per cent. of the reactions were positive; of 7 controls all the findings were negative.

Michaelis and Lesser[36] examined 63 syphilitics and suspected syphilities; 74 per cent. of the reactions were positive.

Müller[37] examined 197 cases of syphilis; 94 per cent. of the reactions were positive; of 500 controls 97 per cent. of the reactions were negative.

Blaschko[38] examined 270 luetics; 87 per cent. of the reactions were positive.

The varying percentage of positive reactions obtained depends on the class of cases examined. In the statistics of some writers, cases with manifest symptoms dominate; in others, metasyphilitic and latent cases make up a good share.

The uniformly negative reaction found in controls and the large percentage of positive reactions in luetic and suspiciously luetic cases not only establish the specificity but likewise the reliability of the test.

On these two points the clinical value of any blood test depends, and when they have been fulfilled, as with the serum diagnosis of syphilis, it is evident that its clinical value is settled as a diagnostic test.

Right here attention should be directed to what a positive reaction implies and what may be interpreted from it. A positive reaction only indicates that the patient has syphilis, whether acquired or inherited. Whether or not this systemic infection is the cause of a pathologic change in some organ or tissue must of necessity be learned from other clinical facts. In other words, a positive reaction may be valued as an indication of systemic infection and not used decisively in making specific organ diagnosis.

Unfortunately the performance of the reaction itself is attended with difficulties which may discourage many who undertake it. Some of these difficulties have been removed by the employment of alcoholic extracts, as the watery extracts were decidedly unstable.

The substances employed in the reaction and their preparation are as follows:

1. *Blood Serum of Suspected Luetic.*—This is obtained as follows: Collect blood from the vein or finger, allow it to clot; remove the separated serum; centrifugate to clearness; pipette off into test-tube, and inactivate at 56 C. for one-half hour.

2. *Organ Extract.*—Take luetic liver or guinea-pig heart and rub up fine with sand in mortar, add 95 per cent. alcohol in proportion of 50 c.c. to one gram of guinea-pig heart. Place in flask and heat in water bath at 60 C. for an hour. Filter through paper filter and keep at room temperature ready for use.

3. *Complement.*—Guinea-pig serum is used. Collect blood from heart of guinea-pig in sterile flask; allow to coagulate and remove the separated serum. Keep on ice ready for use.

4. *Hemolytic Serum.*—Inject a 5 per cent. mixture of washed sheep's-blood corpuscles into a rabbit every week or ten days for four or five times. A week or ten days after the last injection the blood may be removed from heart, serum collected, inactivated, and kept on ice ready for use.

5. *Washed Sheep's-Blood Corpuscles.*—Sheep's blood is obtained from the jugular of a sheep in a sterile flask and defibrinated by glass pearls. It is washed with salt solution two or three times and then mixed with salt solution either in the proportion of 5 per cent. or 50 per cent., according as one adheres to the cubic centimeter plan or drop method for measuring quantities.

As the serum reaction is usually performed, all constituents of test are calculated in fractions of a cubic centimeter and the quantities so diluted with salt solution that each cubic centimeter of dilution represents the desired quantity.

The suggestion of Landsteiner, Müller and Pötzl greatly simplifies this method and takes far less material. They measure the proportion of ingredients to each other by drops.

Before the actual performance of a reaction it is necessary to test material to be used:

1. To standardize the amboceptor.
2. To see that extract alone does not bind complement, or hemolyze sheep's corpuscles.
3. To see that the blood corpuscles have not hemolyzed.
4. To see that the complement is active.

The standardizing of amboceptor is effected by determining what dilution of amboceptor in a drop dose will dissolve in a half hour in an incubator one drop of 50 per cent. suspension of sheep's corpuscles with one drop of complement; a definite amount of salt solution, ten drops, is added as diluent. Twice the strength of this is used in test.

It is desirable to test the extract before each reaction is undertaken to see that it alone does not delay the hemolysis. With this point in view, a drop of extract and one of complement, in ten drops of salt solution in test-tube, are incubated one-half hour and then amboceptor and blood corpuscles are added. Hemolysis should occur within a half hour.

If the blood corpuscles have stood for some days they may have hemolyzed, as may be judged by color of supernatant fluid.

Complement should not be used after the third day.

When all ingredients used in the test are suitable the performance of the reaction is facilitated and never disappointing.

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[27] Citron: Deutsch. med. Wchnschr., 1907, xxxiii, 1165.

[28] Fleischmann and Butler: The Journal A. M. A., 1907, xlix, 934.

[29] Wassermann, M., and Meier: Deutsch. med. Wchnschr., 1907, xxxiii, 1287.

[30] Fischer and Meier: Deutsch. med. Wchnschr., 1907, xxxiii, 2169.

[31] Meier, G.: Berl. klin. Wchnschr., 1907, xxxiii, 1636.

[32] Kroner: Berl. klin. Wchnschr., 1908, xxxiv, 149.

[33] Mühsam: Berl. klin. Wchnschr., 1908, xxxiv, 14.

[34] Karewski: Berl. klin. Wchnschr., 1908, xxxiv, 15.

[35] Weil and Braun: Berl. klin. Wchnschr., 1907, xxxiii, 1572.

[36] Michaelis and Lesser, F.: Wien. klin. Wchnschr., 1908, xxi, 289.

[37] Müller: Wien. klin. Wchnschr., 1908, xxi, 282.

[38] Blaschko: Berlin klin. Wchnschr., 1908, xxxiv, 694.

It is necessary to introduce a few known syphilitic sera and at least as many normals in every test, these serving as controls for suspected sera.

In performing the reaction each serum is tested with and without the extract to see if in the first instance the combination inhibits the hemolysis, and in the second instance that the serum alone does not do so.

Occasionally the serum alone will hasten the hemolysis over the control in which the complement, amboceptor and blood corpuscles are contained, because of the fact that some sera possess a slight amount of amboceptor for sheep's blood corpuscles (Michaelis[10]).

The performance of the reaction is as follows:

For each serum two small test-tubes are required and several tubes for controls of the materials as above, these being repetitions of the tests of material made before beginning the reaction. Add ten drops of salt solution to each tube. Add a drop of serum to each of the two tubes used for a given serum. Then add two drops of organ extract to one of them. To one of the control tubes add two drops of organ extract. To all add a drop of complement. Shake tubes and place in incubator for one hour. Remove and add a drop of standardized amboceptor and one drop of 50 per cent. suspension of sheep's blood corpuscles. Incubate for an hour and a half and then read the result. All controls with sera alone, with normal sera, and with organ extract alone, should be hemolyzed. If in tubes containing suspected sera and organ extract hemolysis has occurred they are regarded as negative. Those containing sera and organ extract, in which hemolysis has not occurred at all or only incompletely, are positive.

Uncertainties not infrequently arise in reading the result of reaction. These are invariably traceable to a failure to test materials used in the reaction, failure of sufficient controls on the material or of control sera, both syphilitic and non-syphilitic.

I have examined 125 cases. Twenty of these were controls in which syphilis could be from examination and history, reasonably excluded. Among the control cases were typhoid, pneumonia, neurasthenia, etc., all of which reacted negatively.

Various classifications are used in reporting cases by different authors. I have grouped mine under two main heads with subdivisions. These include:

First: cases with manifest or suspected syphilis and cases giving a history of syphilis.

Second: cases with lesions of the nervous or cardiovascular systems in which syphilis was either acknowledged, denied, suspected or unsuspected.

Of the first division there were 61 cases.

1. There were in the primary stage either with initial lesions or before appearance of secondary symptoms 4 cases; four positive.

2. In the secondary stage were 25 cases; 24 positive, 1 negative.

3. In the tertiary stage were 17 cases; 16 positive, 1 negative.

Of latent cases there were 15; 8 positive, 7 negative.

In the second division there were 44 cases; positive reaction in 75 per cent. Forty per cent. of these either had no knowledge of infection or denied same.

Class 1.—Taking up the first group of cases it will be observed that of the cases with luetic manifestations, forty-six in number, 93 per cent. gave a positive reaction. This coincides closely with the recent publications already cited for this class of cases. Some variations in percentages will necessarily result because of the method of classification used by different authors, some of whom have classed metasyphilitic cases among the syphilitic with manifest symptoms, for which there is undoubtedly much justification, in view of the recent light thrown on the subject by this test.

Of interest to the syphilologist is the result of this reaction in the primary stage. *In a large percentage of cases with the initial lesion, this reaction is found positive.* This is of great value, not only in analyzing a venereal infection, to-wit: chancroid with possible chancre, urethral chancre, etc., but it is of immense advantage from a therapeutic standpoint, deciding the diagnosis in many instances at once, in case any doubt existed from a point of view of clinical diagnosis and indicating the therapeutic course.

Attention should be directed to the advantage of this test in syphilophobia.

Of the latent cases, fifteen in number, 54 per cent. gave a positive reaction. This forms one of the interesting phases of the syphilis question developed by this reaction. Some of these patients, which number among them those that have been well treated and others indifferently treated, have been free from symptoms for a number of years.

The question whether the latent cases that are negative to the reaction may be regarded as safe and whether those that give a positive reaction are in danger of a recurrence is of great practical importance and at the same time presents difficulties of solution not easily overcome at this time.

Recently Fleischmann[1] has reported three cases that did not give the reaction, but in which the patients within a few months had a recurrence of symptoms. He does not state how long it was from the time of the initial lesion.

The following interpretation of a negative result of the test may be considered as according with our present knowledge: The absence of reaction, even when symptoms are lacking, does not necessarily mean that the patient is cured, but simply that his infection is quiescent, but it gives no assurance beyond this point.

While it may be rash to express an opinion as to the existing anatomic condition or destiny of latent cases, free from symptoms for a number of years, which give a positive reaction, the following statement of Lesser, made a number of years ago and recently quoted by Blaschko may be of some interest and also of value. Lesser stated that certain diseases occur in late syphilis, besides the so-called tertiary manifestations, which are not exactly to be reckoned in the gummatous affections, diffuse changes which develop slowly in apparently healed luetics and which also under circumstances can lead to death. He was able to find in about 9.5 per cent. of all autopsies, investigated by him, signs of such specific disease processes, which during life had produced no symptoms or at least were not generally diagnosed as syphilis, viz., aortitis, etc.

On statistics collected by Blaschko and Jacobsohn, Lesser estimated that about 20 per cent. of the male population of Berlin were infected with syphilis and he maintained that the 9.5 per cent. which had shown evidences of specific processes, postmortem, represented 50 per cent. of those earlier infected with syphilis. Blaschko and Jacobsohn from a study of insurance statistics, came to the conclusion that in one-third of the cases of syphilis death could be traced to the disease. In luetics, therefore syphilis is a cause of death in about 33 per cent. of the cases; but there are demonstrable changes in the organs of dead luetics in 50 per cent. of the cases, which latter percentage coincides with the percentage of positive reactions found in latent cases of syphilis.

While it would be unjustifiable at this time to draw any conclusions from this coincidence, it would seem a safe proposition that cases which give a positive reaction, even though they may not show evident manifestations, should receive serious consideration for treatment, because, irrespective of the above statements of Lesser, it is observable in a certain proportion of the cases that a diminution or disappearance of the reaction will occur under treatment. Just what the latter indicates at this time with regard to cure or abeyance of the infection, no one is prepared, supported by statistics, to state.

Fleischmann and I in our first communication on this subject made note of the observation that the reaction failed in some cases under anti-specific treatment and in others that had been previously well treated, thus coinciding with Citron's observations. On the other hand we examined cases under similar circumstances that gave the reaction.

Müller[37] and Blaschko[38] and also Citron found a disappearance or diminution of the reaction in a third of their cases under treatment. In this matter the factor of time must be of importance; one patient may require a much more prolonged treatment (as is the case clinically with regard to disappearance of symptoms) to bring about a negative reaction, than is needed in another case.

This point has apparently not received any attention, namely, that the factor of time is not defined as it should be in estimating the effect of treatment on the reaction.

Just what effect antiluetic treatment may have on a patient to influence the serum reaction is a matter of conjecture.

While examining sera I tried to determine the effect of a 1-10,000 mercuric chlorid solution on various substances used in the reaction. No effect was produced on complement, amboceptor, or blood corpuscles in whatever combination used. It exerted anything but a uniform action where it was used in the reaction with the extracts.

This may be best shown by presenting results of examinations by extracts without and with mercuric chlorid solution.

The results only are recorded under headings "extract" and "extract and mercuric chlorid solution." The number of + signs express the intensity of the reaction. I have included results of examinations with lecithin and cholesterin.

Extract.	Cholesterin.	Extract + Mercuric Chlorid Sol.
2 +	1 +	3 +
1 +	1 +	—
1 +	—	—
1 +	2 +	2 +
1 +	1 +	1 +
1 +	1 +	2 +
2 +	2 +	—
	Lecithin.	
2 +	1 +	—
1 +	1 +	1 +
1 +	—	—
4 +	4 +	4 +
1 +	2 +	—
1 +	2 +	1 +
1 +	1 +	1 +
1 +	1 +	1 +
3 +	2 +	1 +
3 +	3 +	3 +
3 +	3 +	—

Reaction with extract and mercuric chlorid solution equal to reaction with extract alone 7 times.

Reaction with extract and mercuric chlorid solution stronger, 2 times.

Reaction with extract and mercuric chlorid solution weaker, 2 times.

Reaction with extract and mercuric chlorid solution abolished, 7 times, whereas with extract from 1+ to 3+.

Mercuric chlorid solution abolished the reaction in 39 per cent. of cases.

Class 2.—Following is a synopsis of the diagnosis and result of reaction:

a. Brain syphilis, 5 cases: All gave positive reaction; two of these denied luetic infection.
b. Cerebrospinal syphilis: 1 case gave positive reaction; patient gave history of lues.
c. Hemiplegia, 9 cases: 7 gave positive reaction, 2 negative. Six patients gave history of specific infection, 5 of whom gave a positive reaction. Two (no specific history obtainable) gave a positive reaction. One denied infection and gave a negative reaction.
d. Spinal lues, 3 cases: 2 gave a positive reaction. One of these denied infection. The third patient gave history of infection. Reaction was negative.
e. Transverse myelitis: The patient in one positive case acknowledged syphilis; in one negative case the patient denied infection.
f. Case of uncertain diagnosis in which the patient gave a history of syphilis proved positive to the test.
g. Tabes, 15 cases: 8 gave a positive reaction, 7 a negative. In the positive cases 7 patients acknowledged lues, 1 denying it. In the seven negative cases 2 patients gave history of syphilis, 1 denied infection. From history of 3 others previous infection was strongly probable. In 1 no record was obtainable.
h. Epilepsy, 2 cases; in women, developed in middle life; the reaction was positive.
i. Neuritis, 3 cases: Two of the patients denied syphilis. All gave a positive reaction.
j. Vascular disease, 5 cases: All gave positive reaction. One of these with intermittent claudication, denied lues.

In the tabes cases examined by me the percentage of positive reactions is somewhat low. This class of cases, and likewise many of the other metasyphilitic cases that gave a negative reaction, are so often subjected to antiluetic treatment that it is more than probable that this is the cause of failure of reaction in some of them. Schutze found eight of twelve cases of tabes positive; Citron[27] reported thirteen of fifteen cases and Fleischmann[15] thirteen of eighteen cases positive.

A detailed consideration of cases is deemed impractical in this brief paper.

CONCLUSIONS.

The serum reaction for syphilis is specific.

It is found positive in from 90 per cent. to 95 per cent. of all cases with syphilitic manifestations.

It is found positive in 50 to 60 per cent. of latent cases.

It is found positive in from 70 to 80 per cent. of parasyphilitic diseases.

The reaction is in many cases influenced by treatment of the patient and it is not improbable that this number would be greatly increased if the reaction were pursued throughout prolonged treatment.

A positive reaction indicates activity of the specific virus, and is an indication for antisyphilitic treatment.

While a positive reaction indicates syphilis, a negative reaction does not have an equal negative value.

It is diagnostic of a systemic infection whether acquired or inherited and not an organ diagnostic measure.

The reaction will be found of enormous advantage in differential diagnosis in every department of medicine.

DISCUSSION

Dr. Karl K Koessler Chicago Dr Butler says that it makes no difference whether the reaction is made with syphilitic organ extract, with an alcoholic extract of a normal rabbit's heart, or with lecithin according to Porges and Meier I can not confirm his opinion Although the Porges Meier reaction is said to work with lecithin only, researches made in this line at Vienna have shown that results are obtained in only 45 per cent of cases while the Wassermann reaction gives about 90 per cent The Porges Meier method, however involves quite a different principle from Wassermann's, being a precipitin reaction having nothing to do with the deviation of the complement Any one who, like Dr Butler, has worked out a great many cases knows what a long process Wassermann's method is Certainly it would be much simpler to use the alcoholic extract instead of the syphilitic but comparison between positive results *in each method gives preference to the original procedure of Wassermann* It is perhaps better, in accord with Levaditi's modification, to use a dried extract of the liver of a syphilitic fetus, in order that it may be preserved and a solution made when needed On account of the enormous responsibility for the physician in making the diagnosis of syphilis he should use the method which gives the greatest number of reliable results and in uncertain cases repeat the test three times at intervals of ten days *and* make the positive diagnosis only within the month

Dr William J Butler Chicago Time would not permit the reading of that part of the paper referring to the Porges Meier reaction I used the Porges reaction in a small number of cases and compared it with the Wassermann and the Klausner reactions Recent investigations show that it is not specific, because it is found that tuberculosis will give a positive reaction in about as large a number of cases as will syphilis I did not find it positive as often as I did the Wassermann reaction in the cases of syphilis in which I used it I notice however that Porges and Meier in a recent publication have compared the Wassermann and lecithin reactions and report almost as many positives with the latter as with the complement fixation method

As to the relative value of alcoholic and salt solution extracts, Wassermann contends that the latter extracts give a more reliable reaction than the alcoholic I can not say that in my own observation I have had an opportunity to compare the aqueous saline solution and the alcoholic extracts with the same sera, but it seems to me comparing my previous experience with the aqueous extract that the alcoholic works as well as the salt solution and it has the immeasurable advantage of being stable I do not know of anything more difficult than to work with the salt solution extracts They are most unreliable, sometimes in a few hours or over night a large quantity of liver extract will go wrong and be useless Every test made is controlled by a series of normal and syphilitic sera The use of these controls obviates any chance of error If under these circumstances a suspicious serum is found positive it can be said without hesitancy that the patient has syphilis

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THE NATURE AND THE CAUSE OF EDEMA

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INTRODUCTION

The remarks that follow represent one of the possible applications of a principle which for some time past I have been interested in establishing experimentally namely, that in the variable affinity of colloids for water we have the explanation of many of those physiologic phenomena which are characterized by a storage or a migration of water [1]

If we ignore certain "vitalistic" conceptions of edema in which fantastic properties of "living" cells are supposed to account for the phenomena observed, the increased amount of water held by tissues in a state of edema is usually attributed to "changes in blood pressure," and to "alterations in the permeability of vessel walls" The alterations in the permeability of vessel walls have never been demonstrated experimentally, and all efforts to produce states of edema through simple increase in blood pressure have failed The slight edema observed by some investigators after prolonged intravenous injections at high pressure of enormous amounts of various liquids can be explained more easily by changes brought about in the colloids than through simple pressure effects

Here and there one meets a phrase in the discussion of edema which suggests that the author at least assumes the possibility of a cause for this condition in the tissues themselves, but I know of no experiments planned to actually prove this point, or of any attempts to define the nature of these tissue changes physico-chemically, except those of Jacques Loeb,[2] who, ten years ago, tried to find in an increase in the osmotic pressure of the tissues the cause of the increased absorption of water The inadequacy of this explanation has since become apparent, but the experimental facts adduced by this author to show that the cause of edema resides essentially in the tissues are of permanent value, and should have received a recognition at the hands of pathologists which has never been accorded them

THE CAUSE OF EDEMA RESIDES IN THE TISSUES

For a starting point in our discussion it is well to take the results of some experiments which prove conclusively that the cause of edema resides primarily in the tissues When this is proved we can say that tissues become edematous not because water is forced into them, but because they absorb water from liquids flowing through or about them An analysis of the changes in the tissues leading to the increased absorption of water may then be attempted

My experiments consisted in passing a ligature about one hind leg of a frog or a toad sufficiently tightly to close both the veins and the arteries of that leg and then placing the animal in a vessel containing enough water to cover the legs A ligature placed just above the knee where lack of musculature makes ligation of the vessels an easy matter proved most satisfactory In such an entire absence of the circulation the ligated leg begins to swell and in the course of a few days develops an intense edema The edema is well marked at the end of twenty-four hours, and in two or three days the weight of the ligated leg may come to be almost twice that of the unligated leg

The picture presented by the edematous legs is a duplicate in every way of the most intense states of edema observed clinically The tissues are boggy, pit on pressure, and when incised allow the escape of fluid If the ligature is left in place for two to three days small vesicles form which may enlarge into great blebs con taining a blood-stained serum.[3] Later, these blisters rupture and allow the escape of their contents, and the weight of the ligated leg diminishes. This progressive diminution in weight continues due, in part, to loss of substance, in part to changes which no longer allow the leg to hold the large amount of water it once held.[4] until finally the ligated leg weighs no more than the unligated. If the animal is kept sufficiently long (two to three weeks) the ligated leg is lost entirely (gangrene).

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*From the Laboratory of the Livermore Sanitorium Livermore Cal

* Read in the Section on Pathology and Physiology of the American Medical Association at the Fifty ninth Annual Session held at Chicago June, 1908

[1] Fischer M H Physiology of Alimentation New York, 1907 pp 268 182 187 and 267 269 Fischer, M H and Moore, Gertrude Am Jour Physiol 1907, xx, 60

[2] Pfluger's Archiv fur die gesammte Physiologie 1898 lxxi 468

The increase in the weight of the ligated leg is entirely due to the absorption of water. This water is held in the skin, in the tissues composing the body of the leg—chiefly the muscles—and in the lymph spaces found between the skin and the underlying tissues. With this third division must be mentioned the fluid found in the blisters, which it is well to point out, in passing, are formed in the body of the skin.

As is to be expected, the development of an edema in the ligated leg of a frog or a toad kept in a little water will occur when the animal has been pithed just as well as in the normal animal, but if the frog or toad is killed, the difference in the weight of the two legs does not appear. This is not, however, because the edema does not develop in the ligated leg, but because it develops equally well in the other leg (which has through the death of the animal been deprived of its circulation). Herein is found the explanation of the fact that the tissues of dead bodies which are kept in water swell.

An objection which is likely to be lodged against my experiments is that I did not tie the ligatures sufficiently tightly to shut off both veins and arteries. That this was accomplished is proved by the fact that if the frog or toad was kept in a dry vessel the ligated leg soon dried so as to become brittle, while the unligated leg remained moist.

CHARACTER OF THE TISSUE CHANGES IN EDEMA.

It is clearly shown by these simple experiments that the severest grades of edema may exist without the presence of any "blood pressure" or a demonstrated "increased permeability of blood vessel walls." I shall try to show now that edema represents nothing but an increased affinity of the tissue colloids for water. Such an increased affinity of the colloids may be brought about in either or both of the following ways: *First*, in conditions leading to edema, various substances (particularly acids) capable of greatly increasing the affinity of colloids for water are not removed as they should be or are produced in abnormal amounts, and *second*, colloids having but little affinity for water are changed into such as have a greater affinity.

The first of these two factors plays the predominant rôle and is the only one discussed in this paper. We may regard it as settled that the amount of water held by a tissue under normal circumstances is essentially a function of its colloidal constitution for the same external circumstances which make certain so-called hydrophilic colloids either take up or give off water, make animal tissues do the same.[5]

If, now, the conception of edema as a condition in which this affinity of the tissue colloids for water has been abnormally increased is correct, it must be possible to prove three things: (1) That protoplasm is colloidal in constitution. (2) That in the variable affinity of colloids for water we have a force of sufficient magnitude to account without strain for the maximum amount of water ever found absorbed by tissues in a state of edema. (3) That conditions leading to an increased affinity of their colloids for water exist in the tissues under circumstances associated with the development of an edema. We shall briefly consider each one of these.

1. Since the classical researches of Hofmeister, Pauli, Hardy and a few others, it is no longer questioned by any one that protoplasm represents a colloidal solution in which may be found embedded or dissolved a greater or smaller amount of extraneous material that need not be directly connected with the vital activities of the cell. Since colloids may, however, exist in several states, it is well to decide in which they are present in the cells. For our purposes it is best to distinguish between such colloids as have the power of swelling when placed in water (the so-called hydrophilic colloids) and such which do not possess this property. Many reasons can be adduced to show that protoplasm represents essentially a mixture of several hydrophilic colloids. Not only do dried albumin, fibrin, gelatin, etc., swell when placed in water, but a direct analogy can be proved to exist between the swelling of muscle, for example, and fibrin. The same conditions which make fibrin either take up or lose water, make frog muscle do the same.[5]

2. It must now be shown that in the affinity of colloids for water we have a force of sufficient magnitude to account without strain for the maximum amount of water ever found to be absorbed by tissues in a state of edema. This can be done very easily. The severest edemas found in frogs no more than double the weight of the normal leg. Some observations made on patients indicate that the severest states of human edema give values which lie far below this.

We will now, for the sake of argument, neglect the inorganic constituents of the tissues, and say that three-fourths of the body represents water, and only one-fourth various organic substances. These organic substances belong almost all of them in the group of the colloids. On the basis of the figures which I have just given, 1 gram of dry body substance would therefore equal 4 grams of moist body substance, and this in a state of edema may absorb enough water to double in weight, that is weigh 8 grams. In terms of the dry weight of the body, the colloids are therefore required to absorb in a state of edema, seven times their weight of water. It will be sufficient evidence to show how easily colloids accomplish such an absorption of water when I use as an illustration the amount of water that fibrin will absorb under appropriate circumstances. In a weak solution of acid or alkali, dry fibrin may absorb from 20 to 40 times its weight of water.

3. Lastly, it must be proved that in conditions leading to edema substances are formed which are capable of increasing what we may call the normal affinity of the tissue colloids for water. Various substances are capable of markedly influencing the amount of water held by a hydrophilic colloid.

With the exception of alkalies, we find that acids, including carbon dioxid, are the most powerful substances thus far known for increasing the affinity of colloids for water, and it is in either the retention or the abnormal production of acids in the tissues as rendered possible in conditions leading to an edema, that I see the chief cause for its development. To illustrate how powerfully a little acid modifies the amount of water absorbed by a colloid, we need only recall the fact that while fibrin will scarcely swell sufficiently in distilled water to double its weight it will hold twenty times its weight of water if a little acid is added.

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[3] A circulatory system and the pressure of circulating liquids have therefore, nothing to do with the formation of blisters. The necessary elements for the formation of such pathological structures reside entirely in the tissues themselves.

[4] The tissues of the leg undergo autolysis. In consequence colloids having a great affinity for water are changed into such as have a lesser affinity, or they may be reduced even to crystalloids.

[5] Fischer, M. H., and Moore, Gertrude: Am. Jour. Physiol., 1907, xx, 330

The production of acids in conditions leading to edema has been shown repeatedly. In the described experiments in which one leg of a toad or a frog is ligated, the acid reaction of the tissues may be sufficiently pronounced to evidence itself with the use of any of the common indicators. In some analyses of various edema fluids made in Prof. Friedrich Müller's clinic in Munich I found that these always showed an acid reaction toward phenolphthalein even after the carbon dioxid contained in them had very largely been allowed to escape. We know, moreover, from Hoppe Seyler's analyses that edema fluids contain various acids—lactic, valerianic, succinic, butyric—from Strassburg and Ewald's accounts that their carbon dioxid tension is far above that of ordinary venous blood and from Araki's studies that in conditions associated with a lack of oxygen—just such a state as is produced through circulatory disturbances—organic acids are produced in excessive amounts. Ranke's observation that a muscle after exercise absorbs more water than a resting one, coupled with the fact that acids are produced during muscular activity, also finds a ready explanation through changes brought about in the state of the colloids and lends support to the ideas advanced here.

CONCLUDING REMARKS

It may not be amiss, in conclusion, to point out a number of facts which in a sense are corollaries of what has been said. Attention has already been called to the fact that dead bodies kept in water become edematous. This is due to the fact that after death the tissues become acid and absorb water from their surrounding medium. For the same reason gangrenous tissues swell if a source of water is furnished them either from without or through the blood and lymph vessels. In gangrene due to occlusion of a vein it is well-known that the tissues are ordinarily moist and swollen while a gangrene due to occlusion of an artery is ordinarily dry.

The conception of edema offered here holds for local as well as generalized edemas. In fact, one form of local edema furnishes what amounts to experimental proof of the ideas advanced. Reference is made to the rapidly developing edema which follows the stings or bites of various animals capable of carrying formic or other acids into the wound produced by them. Formic acid is exceedingly active in increasing the affinity of various colloids for water. This explains why its introduction into the tissues, as through a flea bite, is followed by such a rapidly developing local edema. That circulatory disturbances are not primarily responsible in this case is indicated very clearly by the fact that the edematous tissues are initially white and only after resolution has commenced does an increased flow of blood occur through them. "Flea bites" can, in fact, be perfectly mimicked with a needle, a little formic acid and a hydrophilic colloid. If a gelatin plate is pricked with a needle dipped into formic acid, and a little water poured over the gelatin plate, wheals soon develop on the surface of the gelatin which, in shape and in the rate of development are identical with those which follow the bite of a flea or the prick of a formic-acid-laden needle in the skin of a human being.

As another form of local edema which finds a ready explanation on the basis of the ideas advanced here, we may mention glaucoma, and the imbibition of water by the crystalline lens. Even if we do not accept the view that no circulation whatsoever occurs through the vitreous and aqueous humors, we must at least admit that a well defined circulation as maintained through blood and lymph vessels is difficult to demonstrate experimentally. Workers on the eye have therefore been unable to find the explanation of glaucoma in any disturbances in the pressure, *per se*, of circulating fluids; and no attempt has ever been made to account for the absorption of water by the crystalline lens, for here the absence of a circulation is only too apparent. The facts observed are, however, easily explained when it is remembered that the humors of the eye and the crystalline lens represent typical colloidal bodies and that not alone the production of the slightest amount of acid or an accumulation of carbon dioxid, even a mere decrease in the absolute or a slight shifting of the relative concentrations of the various salts found in these substances is followed by so great an absorption of water that the severest grades of clinical glaucoma are easily accounted for.

I wish, finally, to say a word regarding the active or passive migration (diapedesis) of the formed elements of the circulating fluids into the tissues. My reason for bringing up this point at this time is because in the later stages of edema the red blood corpuscles frequently pass over into the tissues, and I would like to protest against the present generally accepted belief that the red blood corpuscles, for instance, pass out of the blood vessels through so-called stomata. Such an idea, is, on its very surface, gross, if not absurd, for how can such holes exist in the blood vessel walls? The histologic evidence of their existence is entirely inconclusive. I would like to call attention to a property of colloids which allows a ready explanation, not only of the passive passage of such formed elements as the red blood corpuscles through the walls of the blood vessels, but also the active movements of the ameboid cells. It is perfectly possible for one colloid to pass through another without losing its identity or leaving any mark behind indicative of its passage. The passage of a liquid body through a colloid can be very nicely illustrated by the movement of a mercury drop through a solidified gelatine of the proper concentration. Under the influence of gravity a mercury drop will move anywhere through a gelatin mass, in which, of course, there are no stomata, and leave no evidence of its passage behind. Similarly red blood corpuscles can, under the influence of a pressure not exceeding that in the blood vessels, be blown into a stiffened gelatin. Here one colloidal body moves through another. Whether one such body will pass through the other is simply a matter of relative surface tensions. Under ordinary circumstances this relation is not such in the body as to allow the red or white blood corpuscles to pass into the tissues (we might say be swallowed), but in lack of oxygen, under the influence of chemical agents (chemotaxis), etc., the proper ratio may be produced.

For the same reason that red and white corpuscles are capable of passing into and through the tissues, bacteria may be taken up by either fixed or motile cells

Pathologists have often wondered how a bacterium may enter the tissues at one point, and leave behind no evidence of entrance. This is because one colloid body may pass through another; from the alimentary tract, for instance, into the walls of the intestine and through this into one of the circulatory systems, and again out of these through the substance of the kidney into the urine.

In this way an infectious agent may wander through any of the tissues of the body, provided the proper surface tension relationships are present, without leaving behind any mark indicative of its passage. Through discussion of the opsonins special interest has recently been attached to the methods by which the surface tension relationships of bacteria to fixed or motile cells may be altered under physiologic and pathologic conditions. An opsonin is nothing but a substance to which has been given an evanescent name, which is capable of so altering the relationship of surface tension of bacterium to cell as to allow the former to be taken up. Many conditions are capable of markedly changing surface tension relationships, and there can be no doubt that we shall on some day not far distant become acquainted with innumerable simple chemical bodies which will, when added to mixtures of leucocytes and bacteria act as our now mysterious "opsonins." We must, however, carefully distinguish between the mere inclusion of an infectious agent and its destruction. Many workers on the opsonins take the swallowing of a bacterium by a cell and its destruction to be synonymous. This is a grave mistake and can not be too vigorously guarded against. Inclusion and destruction are two separate processes, and their mechanism must be separately considered.

DISCUSSION.

Dr. A. J. Carlson, Chicago: I am not familiar with the pathologic side of edema as such. Of course, when one ligates a frog's leg, as Dr. Fischer has done, one produces very abnormal conditions. As far as I know, in the case of local edema at least, there is no evidence of the formation of this specific substance. I think, however, that there is something in this suggestion, but it is only one of the factors in the tissue cell. I do not know that we can throw away the conception of such terms as secretion, inasmuch as terms like that stand for a mass of material the nature of which we do not understand. Nobody, of course, pretends to say that such terms are positive. I think that perhaps two more factors must be considered in edema, namely, the lymphatics and also the blood vessels.

Dr. A. D. Hirschfelder, Baltimore: The conditions of edema in which the limb is ligated and both circulation and lymph flow are cut off are to be differentiated sharply from those in which there is some residual circulation. In the former case, as shown by Loeb ten years ago, differences of osmotic pressure are possible, and probably actually occur. I am under the impression that Loeb did demonstrate some difference between the osmotic pressure of the tissues of the frog's legs above the ligatures as compared with the parts below them. In the latter case the circulation is always rapid enough to allow osmotic interchanges to go on, and marked differences in osmotic pressure do not take place. I therefore think that this is the difference between the two forms of experimental dropsy. The injection of formic acid and other substances certainly brings about injury of the endothelial walls of the capillaries quite as much as it does the very interesting phenomenon of absorption by colloids.

Dr. W. H. Welch, Baltimore: Are the phenomena Dr. Fischer finds applicable to all forms of edema? It can hardly be that a single explanation can apply to all varieties of edema, the mechanical as well as the cachectic. We shall probably not have a clear understanding of edema, of the events, for example, which intervene between the occurrence of passive hyperemia and the accumulation of fluid in the tissues, before the physiologists have settled many disputed matters connected with the production and absorption of lymph. There are certain striking peculiarities of pulmonary edema which must be taken into account on any hypothesis framed to explain this variety. As is well known, general pulmonary edema can appear very suddenly and can disappear with equal rapidity. Can the factors which Dr. Fischer believes to be operative explain these features of pulmonary edema?

Dr. H. G. Wells, Chicago: One thing which Professor Welch just said has always troubled me in applying most of the questions in relation to edema forms; that is the formation of pulmonary edema, particularly the alveolar form in which edema occurs where there are practically no cells and where there is nothing to cause fluid to run. Why should there be an accumulation of fluid in the alveolar space where there are no cells to attract the fluids? To provoke the alveolar fluid? But there is too little of it to account for the rapid production of edema.

Dr. W. B. Cannon, Boston: Dr. Fischer stated that gelatin was capable of taking up fifteen to twenty times its weight of water. As I understand it, that is the dry weight. I should like to know whether the initial amount of water normally associated with the colloids would still allow enough more to be taken to account for the results we see.

Dr. Martin H. Fischer, Livermore, Cal.: It seems to me that when marked edema can be produced, as it is certainly produced in these frogs, it is going out of the way to hunt trouble to insist that the lymphatic circulation must play a rôle. The burden of proof rests on this side of the argument. I am much more inclined to believe that the lymphatic circulation is the consequence of tissue activity than that it causes tissue activity. There is no circulation in these ligated frog's legs and the edema has to be explained without a circulation.

So far as the physiologic functions of the endothelium are concerned we may, of course, if we wish, use the word "secretion," but the word is not an explanation. I believe that we are going to find the explanation of the secretion of fluid into the alveoli of the lungs and into tissue spaces generally in changes in the colloids of the surrounding tissues. These after having become edematous seem to suffer a secondary change, an autolysis perhaps, through which their affinity for water is decreased, and they drop a part of their water, as it were "secrete" it into the alveoli or tissue spaces. I do not care to discuss this point further because I am experimenting on it.

To illustrate my remarks to day, I spoke only of such colloids as can absorb water and maintain their shape. This was done to prove that colloids have an intense affinity for water independently of any osmotic conceptions. As a matter of fact the lymph and different body fluids often have enormous amounts of colloids suspended in them, and these particles in such pseudosolution also have an immense affinity for water, which I have not at all considered in my paper.

I consider it quite immaterial whether an edema is produced slowly or rapidly—whether the circulation is shut off in a moment by tying a string around the leg, or the leg is deprived of oxygen more slowly, the condition affecting only the rate of development of the edema and having nothing to do with its essential cause.

The question whether the ideas advanced are applicable to all forms of edema is one that must be tested and answered by the future. My answer now is "yes." There are a large number of edemas. The simplest forms develop in consequence of heart lesions, thrombosis, and things of that sort. When edemas similar in nature to these are produced in frogs the acid formed is so high that it shows itself readily when litmus paper is touched to the muscles. The edemas of nephritis, for instance, I explain by saying that poisonous substances are produced or retained in this condition which act on the tissues of the body and so alter their metabolism that substances capable of increasing the affinity of the colloids for water, such as acids, are produced. These acids would their influence the colloids of the tissues. Various irritant oils when painted on the skin will produce an inflammatory edema, but these oils when applied directly to such colloids as gelatin or egg albumin do not increase the affinity of these substances for water. We know, however, that there are a number of poisons which produce changes in the tissue that are entirely analogous to those produced through direct lack of oxygen. Potassium cyanid when present in a tissue produces all the changes characteristic of lack of oxygen—the production of acids and the swelling and bursting of the cells affected. But the details of how edema is produced by such indirect means has to be worked out.

All my remarks had to be more or less dogmatic. I do not believe that my ideas must necessarily account for everything in the pathology of edema. Just now it looks to me as though changes in the colloids would explain 97 per cent. of it. Osmotic ideas seem to account for less than 3 per cent. Some day probably with new conceptions in physical chemistry my own 97 per cent. will be reduced to 40, 30 or 20 per cent.

A question raised was that of the rate of development of edema. I consider it one of the best arguments in favor of the views advanced that colloids are capable of changing their affinity for water in the short periods of time sometimes allowed tissues to develop an edema. In five minutes fibrin will readily take up or give off an immense amount of water. Were I to add a little calcium chlorid to a tube filled with swollen fibrin it would make the fibrin shrink to the bottom in a few minutes, the change is so rapid. The reverse experiment can also be made. This very rapidity I consider one of the best argument against the osmotic conception of edema. As a matter of fact, the most rapidly developing edemas observed clinically take more than minutes. One of the substances which is most markedly capable of influencing the affinity of fibrin for water is calcium. Calcium is about the only drug that ever does any good in many of the so-called urticarial diseases. Since urticarial eruptions are essentially local edemas, is it not probable that through administering calcium salts by mouth we increase the calcium content of the tissues and thereby lessen the tendency of the tissues toward a development of these local edemas?

THE CARE OF PATIENTS AFTER ABDOMINAL SECTION,*

WITH ESPECIAL REFERENCE TO THE PERIOD OF TIME THEY SHOULD BE KEPT RECUMBENT

C. C. FREDERICK, B.S., M.D.

BUFFALO

Having heard so much in discussion and having read so much in medical journals about allowing patients to get out of bed after abdominal operations in from five to ten days, it has occurred to me to ask why it is needful to do these things, what are the results from doing these things, and, wherein is the new idea an improvement on the old.

I am just old-fashioned enough to believe that it is harmful, in a vast majority of the cases generally subjected to severe abdominal operations, to get patients up in the short periods of time which are being advocated by so many at present, and I still adhere to my plan of keeping most patients recumbent for two or three weeks. With the exception of appendectomies, not acute, I would say that no patient having an abdominal section should sit up before sixteen or eighteen days, and for the following several reasons:

1. From two to three weeks are required to secure more perfect and more solid union of the incision, thus preventing postoperative hernia. Early in my operative experience I used only the through and through silkworm gut suture, then in vogue, in closing abdominal wounds. These sutures were removed in from seven to ten days, and the patients generally sat up in two weeks. Either I or someone else had the felicity of closing postoperative ventral hernias for about one in every three of the patients who were thus treated, and I assure you I had no small proportion of them on my hands, with all their discontentments, complaints and scoldings. No doubt all of you, as I have myself, have been obliged at various times to re-open an abdomen in a week or ten days after the first operation, and often the catgut or other suture material is cut, the incision may be opened down to the peritoneum by the fingers or handle of a scalpel with the greatest ease; although the parts are adherent, the line of union is so tender that separation by pressure is easily done. In another week or ten days you will find the effort to separate the line a very different proposition, the line of union is strong and resists separation.

During the past twelve to fourteen years I have used the tier suture and kept my patients recumbent for eighteen days, and I have not seen a postoperative hernia in 1 per cent. of my cases. I admit that buried animal sutures play a part in the success, but I believe that the same care in suturing and allowing patients to be about in a week will be followed by frequent hernias.

2. The majority of subjects of abdominal section are reduced physically and need rest, in order to build up bodily vigor. Especially if nervous exhaustion is present the principles of the rest treatment should be carried out and the patient placed in a better condition to proceed to normal recovery.

We are liable, in surgical work, to lose sight of the patient and his general bodily condition and center our attention on the surgical lesion for which we operate. Does the removal of the surgical lesion which has made a patient ill, or which has invalided him, restore his health? No, no more than putting out a fire restores the building which it has demolished. It is simply the removal of a cause of invalidism, but it does not at once tend to set in motion the normal performance of all the functions of assimilation and upbuilding of blood, muscle and nerve which the patient needs to be well.

A sick person undergoes operation for the purpose of getting well, not to be sent home in a week or ten days and remain sick. I know personally of many such who are still sick and ailing, simply because their body was never given the chance to build up. Patients expect to be well as soon as the operation is finished. They always expect that. The surgeon allows them to return to their homes and their usual round of duties—the result being that they use their strength as fast or faster than they can make it, and remain semi-invalids. I am speaking now of patients who are really sick and debilitated when operated on. A person in full vigor, with an operation for strangulated hernia, or some similar acute condition is a different proposition. Such patients will, if they avoid the danger of hernia, recuperate in spite of getting about so soon.

The shock to the digestive apparatus, in the debilitated is often severe and requires from a week to ten days before the normal functions of these organs are re-established. In the meantime decrease in quantity of ingested food and consequent lack of nourishment has still further debilitated the patient. I can not see how it is possible to advise a person in such physical condition to try to be about. We might as well, for instance, advise a bankrupt, where everything is on the minus side of the ledger, to go into the market and take advantage of great bargains in the prices of stocks and bonds. He must be built up, accumulate some working capital, before venturing into investments.

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This is an age of specialism. Unfortunately, the class of specialists who are growing up to-day are specialists from the college to the grave, not as they were among the earlier and older men in the special departments, first general practitioners and then specialists. The older and earlier specialists saw beyond the focus of their specialist lenses. I fear the horizon of the coming specialists is becoming narrowed. There are coming into active prominence many young men who have known from practical experience very little of the interrelations of local and general conditions. I feel that it is a mistake to allow this doctrine of looking at the local conditions and ignoring the general conditions of the patient to gain ground with these rising young specialists; for their view is going to be narrow enough without any such teachings.

By keeping debilitated patients in bed after operation, feeding them well as soon as they can digest and assimilate food, assisting assimilation by favoring elimination of waste products by keeping the skin, bowels and kidneys active, together with massage to help on the lymphatic and venous return circulation, thus building up muscular tissue, are we doing our best to restore the patient to a condition whereby he can continue to improve after he is able to arise from enforced rest?

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DISCUSSION

Dr. H. J. Boldt, New York: I do not think any one who practices surgery would for a moment consider treating his patients in one manner without exception. We have all gone over this field so frequently that I do not think it would be necessary for any one to emphasize again that patients must be treated individually and that the general system must be considered in the after-treatment. Has Dr. Frederick ever tried the early mobility of abdominal section patients to such an extent as to permit him to form an opinion as to the result of this form of treatment? I believe that Dr. Ries deserves credit for first calling attention to the early mobility of patients a number of years ago. I was doubtful of the results as were many others, until I had tried the plan and accumulated a large experience from personal observation. I repeat what I said three or four years ago that if one will observe his patients, there is no other treatment that will compare for the rapid convalescence of the patients, with early mobility, provided that everything is favorable for such treatment.

So far as subsequent hernias are concerned I do not wonder that one-half of the patients by the old method of suturing did subsequently have hernia. If, however, we use the present method of suturing and subsequently place a properly adjusted abdominal support on the patient, there is no reason why any such patient should get hernia. I have re-examined several hundred patients and have failed to see a single instance of hernia from a clean case. This is true not only from my own observation but from that of some of my pupils and assistants who have carried out that line of treatment.

I maintain that if patients feel inclined to get up within twenty-four hours, they may do it with perfect safety. It is not necessary that they get up, but if they feel so inclined and do it, convalescence is more rapid. They should eat whatever they want unless it is especially contraindicated. Attention should be paid to the general health of the patient, and then, following out this line of treatment, I am confident that a more rapid convalescence and early resumption of household duties will be accomplished.

Prof. August Martin: My own experience is in favor of allowing patients to move as soon as they like after laparotomy. Usually they do not like to get up the first day, but on the second day they like the fun of moving, and if they wish to get out of bed the third or fourth day, I do not object. I do not hurry them, and if any one wishes to stay somewhat longer in bed I do not object, but I make them sit up on the third or fourth day. My own experience in this question is a somewhat long one. I recall one of my earliest cases of splenectomy. When I came to look after the patient on the fourth day, I did not find her in her bed and was told that she had gone out. I found her sitting out of doors and enjoying it very much, and there was no trouble whatever.

We must differentiate these cases and if there is any other trouble from the lungs or the heart, or any other condition we should be cautious and look after the patients with some care, not allowing them to go out if there is any symptom of any kind of disorder. The question as far as abdominal operations is concerned, I think is settled by sufficient experience so that we may recommend this treatment. The question is not, however, settled regarding the lying-in cases. We do not keep patients in our puerperal cases in bed as long as we did before. We have undergone another change in respect to puerperal cases: we do not force patients to starve. We nourish them from the very beginning. This is another point that must also be kept in mind for cases of abdominal operation: we do not withhold food as long as we did before. In puerperal cases the conditions are different in that there is an organ in which we find a large wound which must heal, which is not fixed as we can fix the abdominal organs.

When the puerperal uterus is moving and sinking I think that the danger of any disorder may be more imminent. In spite of that it seems to me that the permission to get out of bed early is dependent only on the necessity of the case. If puerperal women are forced to go to work early, then I think it is better to keep them in bed for a longer time. But if they can be cared for quite comfortably they might be allowed to go out of bed as soon as they like. In the question of thrombosis or other disorders, my experience is that these conditions are less frequent if the patient is not kept in bed a long time. We have made progress by following the advice to allow patients to get out of bed rather early after laparotomy.

Dr. C. C. Frederick, Buffalo: I think that many young men beginning operative work are liable to be led away from the principles of taking into consideration the individual and not the operation. A great many of these young men are turning out patients who should not be turned out early and not discriminating between the different cases. I do not keep every patient in bed. I spoke of a certain class, of neurasthenic women particularly, who do better if they are kept in bed for ten days or two weeks with rest treatment. I still maintain that there is a class of debilitated women that do better under the rest treatment. I know the value of this method because I have tried it in my own family. If those patients are made to get up early, within a week or ten days, they do not do so well. If, however, they are carried along under the rest treatment, they get up in better condition.

Prevention of Typhoid.—F. S. Hammond, Trenton, N. J. (*Jour. Med. Soc. New Jersey*), states that in so far as the specific cause of the disease is definitely known and its means of dissemination understood, typhoid fever is a preventable disease, the only rational prophylaxis being not only the safeguarding of common food and water supplies, but the early recognition and isolation of infective individuals and the immediate destruction of the specific organism as it leaves the body.

ANAPHYLAXIS INDUCED BY BACTERIAL PROTEINS.*

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The discovery of the production of hypersensibility, in animals to horse serum, egg white, etc., suggested the possibility of a similar hypersensitization to other proteid materials. It was thought possible that the protoplasm of bacterial cells might lead to similar effects, and in consequence there might be danger from the employment of bacterial vaccines where for some reason the interval between a first and second dose was sufficient for the hypersensibility to develop.

In order to determine whether the foregoing conceptions were correct, a series of experiments was outlined in which guinea pigs received a small dose of a living bacterial culture which was followed, after an interval of fourteen or more days, by a second injection of the same organism.

I selected for the organisms to be employed in these experiments some of the common saprophytic bacteria so as to exclude the possibility of infection. The organisms employed were: *Bacillus cereus, B. megatherium, B. subtilis* and *B. mesentericus*. These organisms were selected because they are generally regarded as being non-pathogenic and they grow readily on the ordinary culture media, so that it is easy to secure a considerable mass of bacterial cells for injections.

The injections were always made into the peritoneal cavity, and the size of the sensitizing doses was either 0.2 c.c. or 0.5 c.c. of a bouillon culture. The second injection ranged from 5-10 c.c. and was always administered intraperitoneally.

There were fourteen experiments with *B. cereus*, of which nine resulted in the production of what was considered as a typical reaction, and two of the results were regarded as atypical. Three of the animals died as the result of the first injection or of some intercurrent cause.

There were six experiments with *B. megatherium* in one of which there was an atypical reaction, and in one case there was induced a purulent peritonitis which terminated fatally three days after the second injection. The other four animals had rather mild symptoms (hypersensitization) from which they recovered.

There were three experiments with *B. subtilis* in one of which there was an atypical result, while the other two had severe symptoms, but subsequently recovered.

There were three experiments with *B. mesentericus* in one of which there was a typical result, while in the other two severe symptoms were developed, but the animals recovered in twenty-four hours.

There were also three experiments in which the guinea pigs had been sensitized with *B. megatherium, B. subtilis* and *B. mesentericus* respectively, and received a second injection of *B. cereus*. Though each of these animals died, as well as two normal animals injected with the same culture to serve as controls, it is evident from the symptoms and lesions that these results were due to the toxic effects of the organisms. In none of these five instances was a typical effect produced, and death resulted in from three to five hours after the injection.

Contrary to my expectations at least some of the cultures which I employed in my experiments were found to be capable of producing fatal effects, especially *B. cereus*, and hence it is impossible to be certain as to the outcome of the experiments. It seems, however, that, as a rule, the fatal termination occurs far more rapidly in the sensitized animal than in the normal control animal, and there is also a more marked pathologic reaction in the sensitized than in the normal animal.

The results which have been regarded as typical were as follows: In a few minutes after the injection of the second dose, the animal manifests movements which indicate irritation of the peritoneal cavity, followed at times by scratching of the head and face, followed later by profound prostration, twitchings, convulsions, stupor, and death in one-half to two or three hours.

At autopsy there was at times marked subcutaneous edema, and the peritoneum, stomach and intestinal walls showed marked hyperemia, with local hemorrhages into the submucous coat of the stomach and intestines, and at times into the kidney and spleen. The peculiar nervous symptoms which these animals manifest indicate that the central nervous system is involved, and on removing the cranium the meninges are seen to be markedly hyperemic, though no hemorrhages were noticed.

The theories that have been advanced to explain the nature and cause of the hypersensitization of animals to various proteid materials are quite variable, and none appear altogether satisfying. Courmont believes that the first injection leads to the absorption of a natural protective substance and leaves the animal defenseless against a second injection. Bail believes that death is due to the production of a substance which impedes the activity of the leucocytes. Richet suggested that the phenomena are due to the presence in the proteid material of the two bodies, the one causing immunity and the other hypersensibility. Wolff believes that there is no immunity to foreign albumins of the endotoxin class, and that through the solution of the cell walls of the bacteria as the result of protective substances formed because of the first injection, the endotoxins are liberated suddenly and in large quantities. Besredka and Steinhardt believe that the first injection produces a brain lesion which renders the organ especially susceptible to the second injection. Currie believes that the antibody formed because of the first injection unites with the antibody-forming substances of the second injection; their union is rapid and the whole charge of the poisonous substance is freed, giving rise to sudden and severe effects.

Rosenau and Anderson state that it is probable that the first injection induces a reaction resulting in the production of antibodies, so that when the second injection is made there is probably either a union or a reaction between the antibodies and the substances in the material injected subsequently which produces the poisonous effect. Vaughan believes that proteid susceptibility and immunity are different manifestations of one and the same process. Both depend on the development in the animal body of a specific proteolytic ferment which acts on the proteid that brought it into existence. This specific proteolytic ferment stored up in the cells of the animal as a result of the first injection remains in the cells as a zymogen until activated by the second injection of the same proteid. Rosenau and Anderson[1] state that "profound chemical changes, perhaps in the central nervous system, are probably produced by the first injection of a strange proteid." Otto believes he has discovered a specific antibody in the blood serum of the sensitized animal. Gay and Southard attribute the hypersensibility to a "rest" remaining in the blood of the animal from the first injection which they designate "anaphylactin." Lewis states that the hypersensitive reaction depends on the development of a special antibody during the incubation period, which antibody may be transferred to a second animal in the blood serum.

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* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

[1] Bulletin 36, Hygienic Laboratory, U. S. P. H. and M.-H. S.

My experiments have been too limited in number and too indefinite in results to permit very positive statements as to the nature and cause of the hypersensibility. However, the definite period of incubation which is necessary for the development of the hypersensibility indicates that some form of antibody is developed as a result of the first injection which takes part in the production of the symptoms and lesions after the second injection. *It seems evident that either a poisonous compound is liberated from the proteid of the second injection through the influence of the newly formed antibody or else there is formed such poisonous substance through the union of the newly formed antibody and a portion of the proteid material of the second injection.*

Although I have not studied the histologic changes produced in the abdominal organs and in the central nervous system, it seems probable that the poisonous substance formed as the result of the second injection has a direct action on the central nervous system and on the sympathetic nervous system as indicated by the profound influence on the respiratory center of the brain and the pathologic effects as shown by the focal hemorrhages into the internal organs. Histologic study of these organs may throw additional light on this point.

Several attempts were made to prevent the development of the effects from the second injection by two methods, the first consisting of the etherization of the animal before administering the second dose, and the second in the employment of small doses at short intervals instead of one large dose for the second injection. Neither of these methods yielded very encouraging results, but this was probably due, in large part, to the fact that the cultures employed were possessed of some toxic properties.

No attempts were made to inhibit the effects of the second injection through the use of the serum of an animal rendered immune to the particular organism employed. It was found possible to neutralize the effects of a second dose of horse serum by the use of the serum of an animal immune to horse serum. I am unable to say whether the same results would follow with cultures.

The results of the investigation showed that there might be some danger in the use of second injections of bacterial vaccines when the first injection precedes the second by an interval sufficiently long for the development of the sensitizing effects. It is evident, however, that the danger under these conditions would be very remote because the dosage of bacterial vaccines employed ordinarily is too small to be dangerous.

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DISCUSSION

Dr. Victor C. Vaughan, Ann Arbor: I object to the term anaphylaxis. Anaphylaxis means decreased protection, and it seems to me this is overprotection rather than decreased protection because as all the work done along this line shows the second dose must be, as compared with the first, quite inappreciable quantity.

Dr. D. H. Bergey, Philadelphia: The cultures I employed were presumably non-pathogenic, but if I were to do the work over again I would use cultures that were killed by some means so as not to produce infection that I might use the full organism and not the proteid from the organism. That is an important criticism of my work, and I should be guided by it in continuing it.

THE ALLEGED URINARY MANIFESTATIONS IN DISEASES OF THE PANCREAS.*

J. HENRY SCHROEDER, M.D.
Clinician in Medicine, Medical Department, University of Cincinnati; Clinical Chemist to the Jewish Hospital
CINCINNATI

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In an examination of 87 cases of disease of the pancreas, Cammidge found a positive reaction in 71, or in 82 per cent., and a negative reaction in 12. These 12 cases were out of 16 cases of cancer of the pancreas, all cases of acute and chronic pancreatitis having been positive. Of 117 cases of various conditions supposedly non-pancreatic 113 were negative in reaction and 4 positive. Of 50 specimens of normal urine all were negative. Cammidge, therefore, states: "The result of the improved or C reaction is an absolute one and is

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[1] Lancet, March 19, 1904; also the complete history of the test and its application, Robson and Cammidge: The Pancreas, Its Surgery and Pathology, 1907.

[2] Robson and Cammidge: The Pancreas, Its Surgery and Pathology, p. 250.

ANAPHYLAXIS INDUCED BY BACTERIAL PROTEINS.*

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Assistant Professor of Bacteriology, University of Pennsylvania.
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The discovery of the production of hypersensibility, in animals to horse serum, egg white, etc., suggested the possibility of a similar hypersensitization to other proteid materials. It was thought possible that the protoplasm of bacterial cells might lead to similar effects, and in consequence there might be danger from the employment of bacterial vaccines where for some reason the interval between a first and second dose was sufficient for the hypersensibility to develop.

In order to determine whether the foregoing conceptions were correct, a series of experiments was outlined in which guinea pigs received a small dose of a living bacterial culture which was followed, after an interval of fourteen or more days, by a second injection of the same organism.

I selected for the organisms to be employed in these experiments some of the common saprophytic bacteria so as to exclude the possibility of infection. The organisms employed were: *Bacillus cereus, B. megatherium, B. subtilis* and *B. mesentericus.* These organisms were selected because they are generally regarded as being non-pathogenic and they grow readily on the ordinary culture media, so that it is easy to secure a considerable mass of bacterial cells for injections.

The injections were always made into the peritoneal cavity, and the size of the sensitizing doses was either 0.2 c.c. or 0.5 c.c. of a bouillon culture. The second injection ranged from 5-10 c.c. and was always administered intraperitoneally.

There were fourteen experiments with *B. cereus,* of which nine resulted in the production of what was considered as a typical reaction, and two of the results were regarded as atypical. Three of the animals died as the result of the first injection or of some intercurrent cause.

There were six experiments with *B. megatherium* in one of which there was an atypical reaction, and in one case there was induced a purulent peritonitis which terminated fatally three days after the second injection. The other four animals had rather mild symptoms (hypersensitization) from which they recovered.

There were three experiments with *B. subtilis* in one of which there was an atypical result, while the other two had severe symptoms, but subsequently recovered.

There were three experiments with *B. mesentericus* in one of which there was a typical result, while in the other two severe symptoms were developed, but the animals recovered in twenty-four hours.

There were also three experiments in which the guinea pigs had been sensitized with *B. megatherium, B. subtilis* and *B. mesentericus* respectively, and received a second injection of *B. cereus.* Though each of these animals died, as well as two normal animals injected with the same culture to serve as controls, it is evident from the symptoms and lesions that these results were due to the toxic effects of the organisms. In none of these five instances was a typical effect produced, and death resulted in from three to five hours after the injection.

Contrary to my expectations at least some of the cultures which I employed in my experiments were found to be capable of producing fatal effects, especially *B. cereus,* and hence it is impossible to be certain as to the outcome of the experiments. It seems, however, that, as a rule, the fatal termination occurs far more rapidly in the sensitized animal than in the normal control animal, and there is also a more marked pathologic reaction in the sensitized than in the normal animal.

The results which have been regarded as typical were as follows: In a few minutes after the injection of the second dose, the animal manifests movements which indicate irritation of the peritoneal cavity, followed at times by scratching of the head and face, followed later by profound prostration, twitchings, convulsions, stupor, and death in one-half to two or three hours.

At autopsy there was at times marked subcutaneous edema, and the peritoneum, stomach and intestinal walls showed marked hyperemia, with local hemorrhages into the submucous coat of the stomach and intestines, and at times into the kidney and spleen. The peculiar nervous symptoms which these animals manifest indicate that the central nervous system is involved, and on removing the cranium the meninges are seen to be markedly hyperemic, though no hemorrhages were noticed.

The theories that have been advanced to explain the nature and cause of the hypersensitization of animals to various proteid materials are quite variable, and none appear altogether satisfying. Cournont believes that the first injection leads to the absorption of a natural protective substance and leaves the animal defenseless against a second injection. Bail believes that death is due to the production of a substance which impedes the activity of the leucocytes. Richet suggested that the phenomena are due to the presence in the proteid material of the two bodies, the one causing immunity and the other hypersensibility. Wolff believes that there is no immunity to foreign albumins of the endotoxin class, and that through the solution of the cell walls of the bacteria as the result of protective substances formed because of the first injection, the endotoxins are liberated suddenly and in large quantities. Besredka and Steinhardt believe that the first injection produces a brain lesion which renders the organ especially susceptible to the second injection. Currie believes that the antibody formed because of the first injection unites with the antibody-forming substances of the second injection; their union is rapid and the whole charge of the poisonous substance is freed, giving rise to sudden and severe effects.

Rosenau and Anderson state that it is probable that the first injection induces a reaction resulting in the production of antibodies, so that when the second injection is made there is probably either a union or a reaction between the antibodies and the substances in the material injected subsequently which produces the poisonous effect. Vaughan believes that proteid susceptibility and immunity are different manifestations of one and the same process. Both depend on the development in the animal body of a specific proteolytic ferment which acts on the proteid that brought it into existence. This specific proteolytic ferment stored up in the cells of the animal as a result of the first injection remains in the cells as a zymogen until activated by the second injection of the same proteid. Rosenau and Anderson[1] state that "profound chemical changes, perhaps in the central nervous system, are probably produced by the first injection of a strange proteid." Otto believes he has discovered a specific antibody in the blood serum of the sensitized animal. Gay and Southard attribute the hypersensibility to a "rest" remaining in the blood of the animal from the first injection which they designate "anaphylactin." Lewis states that the hypersensitive reaction depends on the development of a special antibody during the incubation period, which antibody may be transferred to a second animal in the blood serum.

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[1] Bulletin 36, Hygienic Laboratory, U. S. P. H. and M.-H. S.

My experiments have been too limited in number and too indefinite in results to permit very positive statements as to the nature and cause of the hypersensibility. However, the definite period of incubation which is necessary for the development of the hypersensibility indicates that some form of antibody is developed as a result of the first injection which takes part in the production of the symptoms and lesions after the second injection. It seems evident that either a poisonous compound is liberated from the proteid of the second injection through the influence of the newly formed antibody or else there is formed such poisonous substance through the union of the newly formed antibody and a portion of the proteid material of the second injection.

Although I have not studied the histologic changes produced in the abdominal organs and in the central nervous system, it seems probable that the poisonous substance formed as the result of the second injection has a direct action on the central nervous system and on the sympathetic nervous system as indicated by the profound influence on the respiratory center of the brain and the pathologic effects as shown by the local hemorrhages into the internal organs. Histologic study of these organs may throw additional light on this point.

Several attempts were made to prevent the development of the effects from the second injection by two methods, the first consisting of the etherization of the animal before administering the second dose, and the second in the employment of small doses at short intervals instead of one large dose for the second injection. Neither of these methods yielded very encouraging results, but this was probably due, in large part, to the fact that the cultures employed were possessed of some toxic properties.

No attempts were made to inhibit the effects of the second injection through the use of the serum of an animal rendered immune to the particular organism employed. It was found possible to neutralize the effects of a second dose of horse serum by the use of the serum of an animal immune to horse serum. I am unable to say whether the same results would follow with cultures.

The results of the investigation showed that there might be some danger in the use of second injections of bacterial vaccines when the first injection precedes the second by an interval sufficiently long for the development of the sensitizing effects. It is evident, however, that the danger under these conditions would be very remote because the dosage of bacterial vaccines employed ordinarily is too small to be dangerous.

1963 Brown Street.

DISCUSSION

DR. VICTOR C. VAUGHAN, Ann Arbor: I object to the term anaphylaxis. Anaphylaxis means decreased protection, and it seems to me this is overprotection rather than decreased protection because, as all the work done along this line shows, the second dose must be, as compared with the first, quite an appreciable quantity.

DR. D. H. BERGEY, Philadelphia: The cultures I employed were presumably non-pathogenic, but if I were to do the work over again I would use cultures that were killed by some means so as not to produce infection, that I might use the full organism and not the proteid from the organism. That is an important criticism of my work, and I should be guided by it in continuing it.

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CRITICISM OF CAMMIDGE'S WORK.

Whatever else is recorded in medical literature on this subject is relative to the work of Cammidge. It was unfortunate that the earlier reports by that author were lacking in that spirit of directness which is found in his later work. Until Cammidge finally determined that the body, which he described in his improved or C reaction, was the substance to be looked for, he worked in the earlier, so-called A and B reactions, with glycuronic acid compounds admixed with the latter. The unscientific and ambiguous claims which he set forth, and his faulty technic called forth a spirit of antagonism in the critical mind. Those who repeated the early experiments of Cammidge unhesitatingly declared them to be wrong in principle and faulty in method,[3] and the subject was then ignored. The few clinical references as to the applicability of any other than the improved or C reaction are, therefore, without value.

With the appearance of this improved or C reaction a working basis was offered for further study. From a scientific standpoint by far the most important work was done by Felix Eichler[4] in the department of experimental biology of the University of Berlin. Eichler produced experimentally in two dogs a pancreatitis purulenta diffusa, and in one dog a pancreatitis hemorrhagica. Before the operation the urine of each dog was found to give a negative reaction. After the operation the urine in each case was found to give a positive reaction. Moreover, he determined the melting point of the crystals to be 182 C, which is not that of an ozazone of glucose, nor that of the compound of glycuronic acid. Beyond that he did not define the substance. It should be noted that Cammidge did not carry out this simple experiment, which should have been the fundamental study in the work, the importance of which he, above all others, conceived.

Eloesser[5] reported from the University Clinic at Heidelberg sixteen cases in which a positive pancreatic reaction was found in the urine, and in which the diagnosis was confirmed by operation. In one case the reaction was positive and there was no pancreatic involvement.

Edgecombe,[6] of London, reports a case of mumps in which the pancreatic reaction was positive. Cammidge himself made the test.

An interesting report is furthermore contained in the article of Watson.[7] Watson obtained a markedly positive reaction in all cases of chronic and acute pancreatitis, the diagnosis having been confirmed by operation, or postmortem; also in the course of other diseases, which were diagnosed as chronic pancreatitis because of the recurrence of suggestive clinical symptoms, such as epigastric pain and jaundice. A marked reaction was also found in a case of constipation, which improved by proper treatment, and he suggests that pressure of fecal masses on the pancreas may interfere with its function. In this case, and in several others, an alimentary glycosuria was noticed. Watson found, furthermore, a moderate or slight reaction in various other diseases, as of the heart, kidneys, liver, gall bladder, in colitis, gout, arteriosclerosis, alcoholism, and in two cases of exophthalmic goiter, one of which was benefited by the administration of pancreas emulsion, and in one the histologic examination showed round-celled infiltration of the pancreas. Positive reactions were also obtained in gastric ulcer and in malignant disease of the stomach. In many of these apparently non-pancreatic diseases an involvement of the pancreas, at least functional, can not be excluded.

Further contribution to our knowledge of urinary manifestations of pancreatic disease must be made from studies along definite lines. The experimental work of Eichler must be repeated. When the clinical diagnosis of pancreatitis is made it must be verified by operation during life or by necropsy. Lastly, clinical observations must be made in cases in which there are no pancreatic manifestations. The difficulties which are encountered in the effort to produce results that are entirely free from objection, considering the complexity of the material, need not be especially emphasized.

ORIGINAL INVESTIGATIONS.

The following observations, which I present as a small contribution to the subject, were made primarily with the object of investigating the occurrence of the pancreatic reaction in the urine in various conditions. During the past six months I have examined the urine from 85 individual cases. In all, 110 chemical analyses were made. Of the 85 patients 50 have been under my personal care, having come under observation for various stomach and digestive disorders. Ten specimens were examined through the courtesy of other physicians, and twenty-five specimens were from patients in hospital wards, having no specific evidence of pancreatic disorders.

RESULTS OF THE ANALYSES OF URINE FOR THE PANCREATIC REACTION.

Clinical Diagnosis.	Cases.	Positive.	Negative.
Chronic pancreatitis	4	3	1
Cancer of pancreas	1	1	
Cancer of stomach	3	2	1
Abscess of pancreas	1		1
Gallstones	4	1	3
Catarrhal jaundice	4	1	3
Tuberculosis of peritoneum	1	1	
Tumor of upper abdomen, probably of pancreas	2	2	
Cancer of liver	1		1
Cholecystitis	3		3
Tuberculosis pulmonalis	2		2
	26	11	15

The remaining 59 cases included arteriosclerosis, myocarditis, angina pectoris, nephritis (uremia), cirrhosis of the liver, constipation, ulcer of the stomach (blood), achylia gastrica and nervous disturbances of the gastrointestinal tract. In all these cases the reaction was negative. Twenty-five of these were miscellaneous hospital ward cases. Thus in the urine of sixty patients complaining of digestive disorders or having diseases of the digestive organs, the reaction was positive eleven times. In three of these eleven cases the clinical diagnosis of pancreatitis had been made. A few details of these cases may be of interest.

Cancer of the Pancreas.—The patient was under the observation of Dr. Forchheimer, who made the clinical diagnosis.

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[3] Ham and Cleland: Lancet, May 14, et seq., 1904; Schroeder: Amer. Med., September, 1904; Willcox: Lancet, July, 1904; Haldane: Edinburgh Med. Jour., November, 1905.

[4] Berl. klin. Wchnschr., xliv, 1907.

[5] Mitt. a. d. Grenzgeb. d. Med. u. Chir., xviii, 42, 169.

[6] Practitioner, February, 1908.

[7] Brit Med. Jour., April 11, 1908.

The patient died shortly after that, no necropsy. The urine gave a more pronounced reaction than any other I have observed. I obtained enough of the crystals to determine the melting point, which was 180 C. So far as I know, this is the only clinical record of a melting point determined of this substance. In view of the fact that Eichler in his experiments on dogs found a body having a melting point of 182 C., it is likely that I obtained the identical substance.

Chronic Pancreatitis.—One patient was under the observation of Dr. Bettmann, suffering with violent, colicky abdominal pains, epigastric tenderness and recurring chills and fever. The reaction was well marked and subsided gradually with the patient's symptoms (six analyses). A specimen was immediately re-examined on the recurrence of fever in the course of recovery. The reaction was negative and the cause of the fever was found to be tonsillitis. In a second case, where the clinical diagnosis had been made by Dr. Forchheimer, the urine was examined after the patient had practically recovered. The reaction was negative. The two remaining patients were under my own observation, complaining of "intestinal indigestion"; the feces showed excess of fat and muscle fibers. (Reaction positive.)

Cancer of the Stomach.—In two cases a positive reaction was obtained. One case under my own observation developed an alimentary glycosuria. The diagnosis was confirmed by operation. There were dense adhesions so that the degree of involvement of the pancreas could not be determined. One case was under the observation of Dr. Bettmann. The operation also confirmed the diagnosis and found the pancreas involved. In a third case, which I was asked to see in consultation with Dr. Schulze, I made the clinical diagnosis of cancerous ulcer of the stomach. The pancreatic reaction was negative. The patient died within ten days, and I had the opportunity of making a postmortem examination. The clinical diagnosis was confirmed, the pancreas was found adherent, but the gland itself was not involved. There were no gallstones.

Abscess of the Pancreas.—Under observation of and operation done by Dr. Whitacre. A specimen of urine three days after operation gave negative reaction.

Gallstones.—Of four cases operated on, one case, having a stone in the common duct, gave a positive reaction (case of Dr. Bettmann and Dr. Ransohoff); one case, with a stone in the common duct, gave a negative reaction; one case, having much post-operative pain, gradually subsiding, gave a negative reaction (case of Dr. Ransohoff); one case, gall bladder packed with stones, gave a negative reaction. The pancreas at the operation was found to be hard and nodular.

Catarrhal Jaundice.—Of four cases examined, one was positive and three were negative.

Tumor of the Upper Abdomen.—One case was from Dr. Holt's service at the Cincinnati Hospital. The tumor was regarded as possibly of pancreatic origin. The reaction was positive. No operation. The second case was under observation of Dr. Bettmann. Clinical features the same. The reaction was positive. The feces contained fat and muscle fiber.

Tuberculosis of the Peritoneum.—This case was under my observation for three weeks. The reaction was positive during a period marked by attacks of sharp pain (four examinations). Two months later the examination gave a negative result.

TECHNIC.

In these examinations the method as described by Cammidge has been strictly followed. His procedure consists in boiling the urine with strong hydrochloric acid, neutralizing the excess of acid with lead carbonate, removing the glycuronic acid and other interfering substances with tribasic lead acetate, and the excess of lead in solution with sodium sulphate, and the forming of the ozazone in the usual manner. This method does not permit of modification, except in one particular, which facilitates the work, namely, that one may work with smaller quantities after the initial boiling with acid.

The method that I have found convenient is as follows: 10 c.c. of the urine, filtered, acid reaction, free from albumin and sugar, are boiled with 2 c.c. of strong hydrochloric acid for ten minutes. After partly cooling, 8.0 gm. of lead carbonate are gradually added. When the reaction is complete, the mixture is chilled, filtered, and 10 c.c. of filtrate diluted to 20 c.c. with distilled water. This solution is precipitated with 2.0 gm. of tribasic lead acetate, filtered, and the excess of lead in solution removed by the addition of 2.0 gm. of sodium sulphate, bringing the mixture to a boil, chilling and filtering to 20 c.c. To this filtrate there is now added a mixture of phenylhydrazin hydrochlorate 0.80 gm., sodium acetate 2.0 gm. and of 50 per cent. glacial acetic acid 1 c.c., and the whole is boiled on a sand bath for ten minutes. The solution is then filtered while hot, and set aside to crystallize. The precipitation of crystals, sometimes only in microscopic quantities, of the characteristic formation of ozazones, makes a positive reaction.

The following precautions must be observed:

1. The urine must not contain albumin or sugar, and must be fresh and filtered clear.

2. Positive reactions must be verified by making the phenylhydrazin test for free sugar in the urine, using the same method without previous boiling. Fehling's test is not sufficiently delicate. The sufficiency of removing sugar by previous fermentation has not been proved.

3. Tribasic lead acetate ($Pb(C_2H_3O_2)_2 2PbO$) must be employed. The solution of lead subacetate of the U. S. Pharmacopeia is not satisfactory. I have employed it side by side with the tribasic lead acetate and have obtained misleading results with the former. Before realizing this difference I had some correspondence with Cammidge on the subject, and I agree with him that the tribasic lead is the only suitable precipitant, because of the uncertain and indefinite composition of the pharmacopeial preparation. The positive reaction may be marked or may require microscopic examination. I have noted precipitates that were not crystalline and, therefore, negative. Precipitation may take place immediately on filtering or may occur after standing twenty-four hours. Except as to size, the crystals that I have observed in various positive reactions were apparently of the same system. I can not concede any value whatever to such tests as solubility in sulphuric acid, as tending to point to the nature of the disease, and I have, therefore, never applied this test.

PATHOLOGY.

The apparent value of the pancreatic reaction in the urine makes it reasonable and of interest to reflect on the nature of the conditions that may give rise to this manifestation. The proven results so far obtained would suggest, first, that inflammatory conditions in the pancreas give rise to the reaction. Second, we may infer that chronic pancreatitis *per se* does not give rise to the condition, because the reaction disappears when the cause, such as gallstones in the common duct, has been removed, the infiltration of the gland, the mark of the chronic inflammation, remaining. The reaction, therefore, can not be said to be the direct result of the chronic pancreatitis, but rather of a functional disturbance coincident with the existence of causative factors. Third, it has been shown that pancreatic tissue contains a larger amount of pentose yielding material than any other tissue in the body. Therefore, disintegration, as in cancer and abscess, may lead to absorption and subsequent excretion of pentose. Fourth, pancreatic disturbance may lead to incomplete combustion and excretion of substances of the nature of aldehydes and ketones. Fifth, in the presence of fat necrosis, glycerin products, incompletely oxidized, may give the reaction. Sixth, impaired pancreatic digestion in the intestines may lead to absorption of certain substances that give the reaction.

Cammidge himself suggests that in the absence of pancreatitis, conditions accompanied by rapid tissue changes may produce substances giving the test.

CONCLUSIONS.

The conclusions that may be drawn at this stage of the investigation are limited. They are as follows:

1. It has been proved that inflammatory and destructive disease of the pancreas may give rise to the appearance of certain, as yet undefined, bodies in the urine, belonging possibly to the sugars or related compounds.

2. The reaction is not pathognomonic for disease of the pancreas, in the clinical sense.

Extensive clinical observations on the urine in pancreatic and other diseases must finally determine the value of the pancreatic reaction.

22 West Seventh Street.

Clinical Notes

A CASE OF EXTRAUTERINE PREGNANCY.

ROBERT L. GIBBON, M.D.
CHARLOTTE, N. C.

Patient.—Mrs. Q., aged 41, married seventeen years, had never been pregnant before unless a very indefinite history of miscarriage many years ago, be admitted as such

History.—The last regular menstrual period occurred July 11, 1907. A few weeks later there was a flow from the uterus which was not very free, but persisted for one or two weeks, stopped, and then returned for a time She was at home in Philadelphia at this time and was examined in the latter part of October by her family physician, who pronounced her pregnant. Returning to Lincolnton, N. C, she came under the care of Dr. Wise, who took her to the Presbyterian Hospital at Charlotte during the last week in November. At this time, about four months after the last menstruation, the patient had become very uneasy about her condition and feared an abdominal tumor.

Examination.—Examination disclosed an abdominal mass corresponding in size with the supposed stage of pregnancy. Bimanually ballottement was easily obtained, but the presenting part of the fetus was not readily made out No fetal heart sounds were heard, but uterine souffle was pronounced. The diagnosis of pregnancy was confirmed and the patient returned home.

Subsequent History.—Nothing more was heard from the patient until May, 1908, when her physician told me that the patient had gone a month or more over her time, that fetal movements had entirely ceased for six weeks, although they had been vigorous and even annoying up to that time, and that the patient's general condition was not good.

May 6: She was brought to the hospital again, and the following history was obtained covering the period since the previous November. Abdomen continued to enlarge up to six weeks ago, when severe pains, of an intermittent character, came on and the patient, supposing she was in labor, summoned her medical attendant. Matters did not progress, however, and after a time the pains ceased. Fetal movements were not noted after this pseudolabor. From the fourth to the end of the ninth month the patient suffered continuously from abdominal pain and gastric disturbances. On several occasions a membranous substance was discharged from the vagina, and on one of these occasions the membrane discharged resembled a cast of the uterine cavity.

Examination.—It was easy to make out by palpation the parts of a well-developed child. Vaginal examination disclosed the head presenting, it being felt apparently in the posterior cul-de-sac; the os was not patulous. In addition, two masses were felt through the abdominal wall which were supposed to be fibroids. *Uterine souffle was absent.*

Operation.—On May 9, the abdomen was opened in the median line. The omentum was found firmly adherent to two medium-sized fibroid tumors on the anterior surface of the uterus and completely prevented any view of the organs beneath. What was more surprising, however, was the condition of the omentum itself; it was almost perfectly black, as though on the point of becoming gangrenous. As a consequence, a large portion, about two-thirds, was ligated in sections and removed. The uterus was then seen to be enlarged to the size of a four-months' pregnancy, while behind and to the right was a dirty, brown colored mass, which on being opened disclosed a fully developed male child, in a somewhat macerated condition. In spite of the fact that the child had been dead at least a month, the placenta was found firmly attached and no effort was made to detach it, but instead it was found possible to remove about three-quarters of the sac, including that portion to which the placenta was fixed. The remaining portion of the sac was brought out at the lower angle of the wound, the edges clamped with forceps and the cavity packed. The abdominal incision was closed in the usual manner, except at the lower angle.

Result.—The patient ran a moderate temperature during the separation of the remainder of the sac, and developed a mild phlebitis of the right leg, but in other respects the recovery was uneventful. I am unable to explain the condition of the omentum, which may have been due to an infarction, but at time of operation its appearance gave rise to the gravest apprehension.

HYPERSUSCEPTIBILITY TO HORSE SERUM.

MAX DREYFOOS, M.D.
CINCINNATI.

As a contribution to the reports of cases of reactions following the injection of antitoxic sera, I wish to add the following report. It is, I believe, the first case reported in which this reaction has followed the injection of tetanus antitoxin.

Patient.—A young man of 24 years, on June 16, 1908, sustained a punctured wound of his left foot by stepping on a rusty nail at an iron-yard. He went to the Jewish Hospital, where he was placed on the service of Dr. Joseph Ransohoff. Under local cocain anesthesia a triangular-shaped area of skin and subcutaneous tissue, about one-half inch deep, and containing the wound, was excised from the plantar surface of the foot, and the resulting wound thoroughly cleansed. Throughout the operation the patient was perfectly composed and was not distressed in any way.

Administration of Serum.—A prophylactic injection of 10 c.c. (1,500 units) of tetanus antitoxin was then given under the left breast, and a moist bichlorid dressing was applied to the wound.

Effects.—About one half to one minute after the injection of the serum the interne bandaging the foot noticed that the patient began turning this foot from side to side, and then flexing and extending the knee. When asked why he did not keep his foot quiet, the patient replied very brokenly: "Oh--I wish--you hadn't-- given--me--that--injection; the--operation didn't--hurt--me--but--that injection--makes me--feel so--sick." By that time (about two minutes after the injection) the restlessness became more marked, rapidly extending to trunk and head; the patient rolled from side to side and had to be held, to prevent his falling from the operating-table. His face was very pale, not cyanotic, and presented a very anxious expression; there was no froth at the mouth, and his pulse was but slightly accelerated. He was very dyspneic and wanted to sit up in order to "catch his breath"; he complained of a sense of great constriction of his chest, especially on the left side, and in back, and wanted to be left on the table for a few minutes. He was, however, placed on the stretcher and wheeled to his room, and in spite of restraint struggled to assume a sitting position on the stretcher. After being in his room (five or ten minutes after the injection) he complained still more of the constriction and oppression in his chest, the pain in his back and the dyspnea, and asked to have some one press on his chest and support his back. Propping up on pillows afforded no relief; he tossed about in bed very restlessly and felt as though he were going to die. Twenty to twenty-five minutes after the injection he began to feel more easy, but was still greatly distressed and very restless. Later he was given a hypodermic injection of one-fourth grain of morphin, but this did not seem to influence the symptoms. The symptoms gradually abated, but were not entirely gone four hours later. At this time (8 p. m.) his temperature was 100.1 F., pulse 80. He was somewhat restless that night but slept a good part of the time. The next day he felt perfectly well, apparently none the worse for his experience.

In this case there was none of the itching or puffing of the skin noted in most of the cases, also no froth pouring from the mouth, nor cyanosis.

It is perhaps fortunate for all concerned that the patient was not given a full dose of 20 or 30 c.c. of the serum, as this would in all probability have resulted much more seriously—perhaps in death.

19 West Seventh Street.

INTESTINAL OBSTRUCTION PRODUCED BY A GAUZE SPONGE.

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In the August *American Journal of Obstetrics* is an article by Palmer Findley on "Foreign Bodies Left in the Abdominal Cavity." He discusses various results following the leaving of sponges in the abdominal cavity and the method by which they are eventually extruded. After relating many cases he closes with an admonition to the surgeon by all means to avoid publicity to the laity concerning these things. In this connection I report the following interesting case:

On August 8, 1908, I was called to Albany, Ore., in consultation with Dr. Booth of Lebanon, Ore., and Dr. Davis of Albany, to see a case of intestinal obstruction. The patient had had a hysterectomy performed thirteen months before. There was a palpable enlargement in the right inguinal region. We all agreed that the probable condition was strangulation of a knuckle of intestine due to postoperative adhesions. In the abdomen we found practically no adhesions in the neighborhood of the former operation, but a lump the size of a man's wrist, five or six inches long, in the lumen of the small intestine which was entirely free. The intestine above the tumor was much distended and ecchymotic spots were numerous. The intestine below the enlargement was collapsed. An incision was made into the bowel and the lump was discovered to be cloth of some kind. Owing to the fact that it was four or five feet from the stomach and in the jejunum, and as the only adhesions in the abdominal cavity were just back of the transverse colon around the stomach, the conclusion which we all reached was that the patient was probably hysterical and had swallowed a variety of things, including this piece of cloth. A thorough search, therefore, was made of the stomach, with the idea that it possibly contained a variety of foreign bodies. Nothing was found.

As soon as the operation was completed a thorough investigation was made, and it was soon found to be a sponge which had apparently been left there thirteen months before. During this time the patient had gained twenty pounds in weight and had noticed no disturbance prior to the immediate attack, except pain in the region of the stomach and this "lump." This sponge had evidently made its way through the walls of the stomach and thus down the intestine or through the upper part of the jejunum back of the colon. This had been well done, for while the incision was so located that we were unable to make a thorough exploration in the neighborhood of the stomach, there was scarcely anything visible aside from adhesions in front of the stomach proper and in the neighborhood of the jejunum just back of the transverse colon. These adhesions back of the colon were not strong.

Several cases have been reported in which a sponge, or other foreign body, sloughed into the large intestine, but very few, I think, in which a sponge penetrated the extreme upper part of the alimentary canal, except Ries's case referred to by Findley, in which a woman pulled a sponge from her mouth after an abdominal section. Ries was called before the state's attorney to explain and so impressed the attorney with the impossibility of the occurrence that the case was dismissed.

Notwithstanding this, the fact that our patient had had pain and a lump in the neighborhood of the stomach much of the time since the first operation, that there were no adhesions in the abdomen, except in the region of the stomach, that the cloth was beyond question a surgical sponge, makes this case authentic with scarcely a doubt that the sponge passed through the wall of the stomach and down the small intestine about four or five feet where it rolled up and produced the obstruction.

Special Article

FOURTH OF JULY INJURIES AND TETANUS.

For the sixth consecutive year we are presenting statistics regarding injuries received during the celebration of the Fourth of July, with particular reference to tetanus resulting from these injuries. Considerable effort has been made to secure reliable data, and all serious cases have been carefully investigated, so that dependence may be placed on the figures here given. We have received thousands of letters from physicians in all parts of the country, reporting cases which otherwise could not have been included in these statistics, and there are doubtless many other cases not reported, although this would refer more to the minor injuries. Our thanks are due for the many careful reports which have made these statistics more complete and the figures more reliable. The data are presented in the same manner as heretofore, in order that comparison may be made.

CASES OF TETANUS.

There were 76 tetanus cases this year, or three more than last year, but 13 less than in 1906. Since 1903, when THE JOURNAL began publishing these statistics, there has been a constant decrease until this year. It is interesting if not significant to note how the injuries from blank cartridges correspondingly decreased until the slight increase this year (see Table 5).

The most common cause of the wound is the blank cartridge and the usual site is the hand. The duration given is the number of days between inoculation and death or recovery. Following the injury it required from 5 to 9 days before the symptoms of tetanus appear,

Table 1.—Cases of Tetanus.

Name	Age.	Cause of Wound.	Site of Wound.	Duration in Days.	Result.
CONNECTICUT.					
Errico	8	Bl. c.	Hand	11	D.
ILLINOIS.					
Foster	13	Bl. c.	Thigh	7	D.
Fox	6	Bl. c.	Finger	8	D.
Gilbert, J.	35	Bl. c.	Finger	..	R.
Marlo	11	Bl. c	Hand	7	D.
Marx	..	Gunshot	Hand	..	R.
Miller		Bl. c.	Arm	..	.
Pearson	9	Bl. c.	Hand	7	D.
Roginski	..	Bl. c.	Hand	.	.
Szcepanski	13	Bl. c	Hand	8	D.
Thiele	4	Firecracker	Neck	4	D.
Toma	35	Firecracker	Hand	8	D.
Wells	Boy	Firecracker	Foot	..	..
IOWA.					
Rudig	7	Cane	Leg	..	..
KANSAS.					
Gates	Adult	Bl. c	Hand	..	..
KENTUCKY.					
Devoto	9	Bl. c.	Hand	6	D.
MAINE.					
Edgar	8	Bl. c.		11	D.
MASSACHUSETTS.					
Acheson	36	Bl. c.	Hand	7	D.
Caroll	14	Bl. c.	Hand	11	D.
Costello	12	Bl. c.		7	D.
Forzley	19	Bl. c.	Hand	7	D.
Stokes	12	Bl. c.	Leg	16	R.
MICHIGAN.					
Gilbert	11	Bl. c	Hand	14	D.
Glogofsky	14	Bl. c.	Thigh	36	R.
MISSOURI					
Barlow	10	[illegible]	[illegible]	10	D.
Brock	15	[illegible]	[illegible]	10	D.
Carman	13	[illegible]	[illegible]	11	D.
Carriger	12	Bl. c.	Hand	9	D.
Tannyhill	15	Cannon	Hand	18	R.
NEBRASKA.					
Bryant	12	Bl. c.	Hand	9	D.
NEW JERSEY.					
Benz	9	[illegible]	[illegible]	6	D.
Carroli	12	[illegible]	[illegible]	5	D.
Faraseidiz	8	[illegible]	[illegible]	8	D.
Hall	14	[illegible]	[illegible]	8	D.
Johnson	14	[illegible]	[illegible]	..	..
Kolcabage	25	[illegible]	[illegible]	6	D.
Paglis	8	Bl. c.	Hand	5	D.
Sharpley	12	Bl. c	Hand	7	D.
Sindle	14	Bl. c	Finger	12	D.
Terasino	8	Cannon	Hand	8	D.
NEW YORK.					
Ashley	6	Firecracker	Hand	..	..
Bushman	16	Cannon	Hand	..	.
Czebowski	13	Bl. c	Hand	..	D.
Dobucki	13	Bl. c	Hand	10	D.
Fogarty	49	Firecracker	Hand	25	D.
Frie enberger	19	Bl. c.	Finger	4	D.
Nolan	12	Bl. c.	Hand	10	D.
Sherwood	Boy	Bl. c.	Hand	..	D.
Zemrok	15	Bl. c	Hand	13	D.
OHIO.					
Vinkley	40	Fireworks		..	..
Held	19	Bl. c.	Hand	8	D.
Herweh	10	Bl. c.	Hand	..	..
Kastler				13	D.
Lukaz				9	D.
Olmstead				9	D.
Ricker	16	Bl. c	Hand	..	..
OKLAHOMA.					
Fine	12	Bl. c.	Hand	13	D.
OREGON.					
Moores	10	Bl. c.	Hand	..	..
PENNSYLVANIA.					
Conniff	15	Bl. c.	Finger	11	D.
Gilbert	13	Bl. c	Hand	..	R.
Marlo	..	Gunshot	Hand	..	D.
Mucka	5	Fireworks	Foot	9	D.
Roane	24	Bl. c	Hand	11	D.
Smith, M	16	Bl. c.	Finger	10	D.
Smith, T.	19	Bl. c	Finger	7	D.
SOUTH DAKOTA.					
Baker	11	Bl. c.	Hand	12	D.
WASHINGTON.					
Bauer	8	Bl. c.	Hand	10	D.
Slaab	13	Bl. c.	Hand	13	D.
Slingsby	16	Bl. c.	Hand	12	D.
Slorah	10	Bl. c.	Hand	10	D.
WEST VIRGINIA.					
Glendenning	14	Bl. c.	Thigh	14	D.
WISCONSIN.					
Hartzheim	15			22	R.
Hertziger	Boy			22	D.
Horuke	5			33	R.
Koch	..			..	..
Winkler	10			11	D.

the average of all cases reported being 8 days. In one case the symptoms began on the third day, while in one of the cases which finally recovered the symptoms did not appear until 16 days after the accident. Following the appearance of the symptoms death resulted in from 16 hours to 3 days, the average of all cases reported being about 36 hours. In 7 cases the entire duration of time between inoculation and death was six days or less. The average for all fatal cases reported was about 9 days. The list of tetanus cases is given in Table 1.

Tetanus cases occurred in 20 different states, or in 3 less than last year, and in 5 less than in 1906. For the fourth consecutive year Illinois reports the largest number, having 12 cases this year, 12 last year, 16 in 1906 and 20 in 1905. In 1903 and 1904 Pennsylvania reported the highest numbers. For the third consecutive year New Jersey reports the next highest number, having 10 cases this year, 8 last year and 10 in 1906. New York this year reports 9 cases or 5 more than last year. Ohio and Pennsylvania each report 7 cases this year. For the first time in the six years California had no cases, while South Dakota reports its first case this year. Table 2 gives a comparison of the number of cases in each state for the six years.

Table 2.—Comparison with Previous Years.

	1903	1904	1905	1906	1907	1908
Alabama	..	..	1	..	..	..
Arizona	..	..	..	..	1	..
California	2	4	4	3	1	..
Colorado	4	..	1	..	..	..
Connecticut	3	..	3	..	4	1
Delaware	..	..	1	1	1	..
District of Columbia	1	..	..	..	..	..
Florida	..	..	..	..	..	..
Georgia	..	..	..	..	1	..
Idaho	1	..	..	..	..	..
Illinois	19	15	20	16	12	12
Indiana	11	6	3	8	2	..
Iowa	14	2	3	4	1	1
Kansas	11	1	..	..	2	1
Kentucky	4	2	..	1	..	1
Louisiana	..	..	..	..	..	..
Maine	2	1	1	1	..	1
Maryland	1	..	1	1	..	..
Massachusetts	16	5	7	3	2	5
Michigan	29	7	9	4	4	2
Minnesota	15	2	2	2	2	..
Missouri	29	1	3	3	1	5
Montana	2	1	1	..	1	..
Nebraska	4	3	3	1	..	1
New Hampshire	2	..	..	1	..	..
New Jersey	8	9	3	10	8	10
New York	36	9	6	8	4	9
North Dakota	..	..	..	..	..	..
Ohio	67	9	5	7	6	7
Oklahoma	1	..	1	1	..	1
Oregon	2	..	..	1	1	1
Pennsylvania	82	17	12	5	7	7
Rhode Island	3	..	..	1	..	..
South Carolina	..	..	..	..	..	..
South Dakota	..	..	..	..	..	1
Tennessee	..	..	..	..	..	..
Texas	..	..	..	..	2	..
Utah	..	1	1	..	..	..
Vermont	3	2	..	2	2	..
Washington	2	1	..	..	2	4
West Virginia	3	..	..	2	..	1
Wisconsin	10	4	13	2	3	5
Wyoming	..	..	..	1	..	..
Total	415	105	101	89	73	76
No states having cases	30	21	23	25	23	20

Blank cartridges continue to be responsible for the great majority of tetanus cases, 58 or 76.3 per cent. of all cases this year being due to that cause, as compared with 71 per cent. last year and 60 per cent in 1906. Giant firecrackers caused only 5 cases this year, as compared with 8 cases last year and 17 in 1906. Four cases resulted from toy cannon injuries and 3 from gunshot wounds, while 6 were caused by explosions of powder or by other varieties of fireworks. Table 3 gives a comparison of the causes of tetanus cases for the six years.

While there were 76 cases of tetanus due to Fourth of July injuries this year, only 55, or 72 per cent. of these were reported to have ended fatally, as compared with 85 per cent. of deaths last year and 84 per cent. in 1896.

TABLE 3.—CAUSES OF TETANUS CASES.

Year.	Blank Cartridge.	Giant Cracker.	Cannon.	Fire-arms.	Powder, etc	Total.
1903	363	17	5	3	27	415
1904	74	18	5	1	7	105
1905	65	17	4	5	13	104
1906	54	17	1	7	10	89
1907	52	8	6	4	3	73
1908	58	5	4	3	6	76

DEATHS FROM FIREWORKS, ASIDE FROM TETANUS.

Besides the 55 deaths due to tetanus, there were 108 persons who were killed this year by various forms of fireworks. making a total of 163 deaths, or one less than last year, but 5 more than in 1906. While the deaths from tetanus are decreasing, the deaths from other causes are increasing, so that the total still remains high. Thirty were killed outright this year by firearms, 23 by giant crackers, 22 were burned to death by fire and fireworks, 19 were killed by explosions of powder, 7 by toy cannon and 7 by various causes, such as blood poisoning, by sky rockets, chemicals, etc.

As heretofore, all accidents not directly due to the discharge or handling of fireworks or other means of

TABLE 4.—CAUSES OF DEATHS NOT DUE TO TETANUS.

Year.	Gunshot.	Fire from Fireworks.	Powder, Torpedoes, etc.	Giant Crackers.	Cannon.	Other Causes.	Total.
1905	37	23	6	5	7	17	95
1906	38	18	18	3	3	3	83
1907	20	31	13	13	3	22	102
1908	30	22	19	23	7	7	108

TABLE 5.—SUMMARY BY STATES OF JULY FOURTH CASUALTIES

	Deaths.			Injuries.						Total Persons Dead or Injured.	Causes of Tetanus Cases.		Causes of all Cases Aside from Tetanus Cases.				
	From Tetanus.	From Other Causes.	Total.	Loss of Sight.	Loss of One Eye.	Loss of Legs, Arms or Hands.	Loss of Fingers, One or More.	Other Injuries.	Total Non-Fatal Injuries.		Blank Cartridge.	All Other Causes.	Blank Cartridge.	Fire Crackers.	Cannon.	Firearms.	Powder and Fireworks.
Alabama	....	....	....	....	....	....	1	1	1	....	....	....	....	....	....	....	1
Arizona	....	....	....	....	....	....	....	5	5	5	....	....	1	2	....	....	2
Arkansas	....	....	....	....	....	....	....	5	5	5	....	....	....	1	1	3	....
California	....	3	3	1	2	2	6	122	133	136	....	....	5	46	18	8	59
Colorado	....	....	....	....	....	....	....	13	13	13	....	....	....	4	4	2	3
Connecticut	1	1	2	....	....	1	4	98	103	105	1	....	30	24	17	9	24
Delaware	....	....	....	....	1	....	....	11	12	12	....	....	....	3	5	....	4
District of Columbia	....	....	....	....	....	....	....	21	21	21	....	....	....	9	....	5	7
Florida	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Georgia	....	1	1	....	1	....	....	2	3	4	....	....	....	....	1	2	1
Idaho	....	....	....	....	....	....	....	4	4	4	....	....	4	....	....	....	....
Illinois	7	13	20	1	7	7	24	499	538	558	8	4	113	183	26	44	180
Indiana	....	2	2	....	2	....	[illegible]	241	253	255	....	....	22	99	28	16	90
Iowa	....	1	1	....	3	2	3	165	173	174	....	1	5	73	6	4	85
Kansas	....	....	....	....	4	1	4	63	72	72	1	....	15	11	16	10	19
Kentucky	1	1	2	1	1	....	1	28	31	33	1	....	....	4	3	13	12
Louisiana	....	....	....	....	....	....	....	4	4	4	....	....	....	....	....	....	4
Maine	1	1	2	....	....	....	1	13	14	16	1	....	....	3	4	2	6
Maryland	....	1	1	....	....	....	1	19	20	21	....	....	3	4	3	3	8
Massachusetts	4	11	15	2	9	2	11	391	415	430	5	....	72	125	22	30	176
Michigan	1	3	4	....	6	[illegible]	8	183	199	203	2	....	20	82	11	18	70
Minnesota	....	1	1	....	3	....	....	61	64	65	....	....	1	17	11	4	32
Mississippi	....	....	....	....	....	....	....	1	1	1	....	....	....	....	....	1	....
Missouri	4	3	7	....	....	2	7	359	368	375	4	1	165	97	12	24	72
Montana	....	2	2	....	2	....	1	6	9	11	....	....	....	3	2	1	5
Nebraska	1	....	1	....	1	....	5	39	45	46	1	....	3	8	11	9	14
Nevada	....	1	1	....	....	....	....	3	3	4	....	....	....	1	....	....	3
New Hampshire	....	1	1	....	1	....	1	10	12	13	....	....	1	1	5	3	3
New Jersey	9	6	15	1	9	7	21	419	457	472	8	2	107	150	23	52	130
New Mexico	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
New York	7	13	20	2	9	12	26	578	627	647	6	3	58	212	42	76	250
North Carolina	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
North Dakota	....	3	3	....	....	....	3	7	10	13	....	....	1	6	1	1	4
Ohio	4	13	17	1	8	....	11	506	526	543	4	3	65	217	27	40	187
Oklahoma	1	....	1	....	....	1	1	6	8	9	1	....	3	1	1	3	....
Oregon	....	....	....	....	....	....	1	8	9	9	1	....	....	4	3	....	1
Pennsylvania	6	15	21	1	17	13	15	920	966	987	5	2	82	311	32	68	487
Rhode Island	....	1	1	....	1	....	....	37	38	39	....	....	3	9	4	4	19
South Carolina	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
South Dakota	1	....	1	....	....	....	1	8	9	10	1	....	3	1	....	1	4
Tennessee	....	....	....	....	....	....	....	5	5	5	....	....	....	....	1	3	1
Texas	....	1	1	....	....	....	1	9	10	11	....	....	1	1	4	2	3
Utah	....	....	....	....	....	1	1	10	12	12	....	....	....	3	1	....	8
Vermont	....	3	3	....	....	....	2	14	16	19	....	....	....	3	4	8	4
Virginia	....	....	....	....	....	....	....	5	5	5	....	....	....	....	1	....	4
Washington	4	3	7	....	3	1	3	24	31	38	4	....	4	11	10	....	9
West Virginia	1	1	2	....	1	....	3	23	27	29	1	....	6	8	4	5	5
Wisconsin	2	3	5	1	2	3	11	165	182	187	3	2	23	56	35	7	61
Wyoming	....	....	....	....	....	....	....	1	1	1	....	....	....	....	....	....	1
1908 totals	55	108	163	11	93	57	184	5,115	5,460	5,623	55	18	816	1,793	379	481	2,078
1907 totals	62	102	164	12	75	57	237	3,868	4,249	4,413	52	21	551	1,450	267	502	1,528
1906 totals	75	83	158	22	72	56	227	4,931	5,308	5,466	51	35	925	1,690	408	532	1,822
1905 totals	87	95	182	25	106	80	221	4,562	4,994	5,176	65	39	744	1,775	474	401	1,677
1904 totals	91	92	183	19	61	61	208	3,637	3,986	4,169	74	25	931	1,268	508	406	1,955
1903 totals	406	60	466	10	75	54	174	3,670	3,983	4,449	363	29	1,999	1,152	397	256	731
Grand totals	776	540	1,316	99	482	365	1 251	25,783	27,980	29,296	666	107	5,979	9,757	2,453	2,561	8,570

noise production on or about the Fourth of July have been omitted. Accidents which occurred in regular occupations and gunshot wounds received in brawls have likewise been omitted.

Table 4 shows a comparison of the causes of death other than from tetanus for the past four years.

In Table 5 will be found a summary of all injuries including tetanus and of all causes arranged by states. Beneath the totals at the bottom of the table are given the totals for the five previous years, in order that comparisons may be made. The grand totals are also given. Table 6 is arranged to show a more ready comparison by states of the total deaths and accidents for the six years.

Pennsylvania again swings into the lead with 987 casualties, New York coming second with 647, followed by Illinois with 558, Ohio with 543, New Jersey with 472 and Massachusetts with 430. Altogether there were 5,623 accidents this year, the largest number reported in any one year. There were 1,210 more than last year and 157 more than in 1906.

TABLE 6.—TOTAL DEATHS AND ACCIDENTS IN STATES DURING SIX YEARS

	1903	1904	1905	1906	1907	1908
Alabama	[illegible]	7	1	2	1	1
Arizona	1		1	5	2	[illegible]
Arkansas			[illegible]	4		5
California	100	138	112	96	121	[illegible]
Colorado	39	44	26	23	25	13
Connecticut	162	[illegible]	132	160	63	105
Delaware	1	5	11	8	10	12
District of Columbia	2	10	24	5	12	21
Florida	1	2	2			
Georgia				1	2	1
Idaho	4	4		3	4	1
Illinois	506	125	542	558	465	558
Indiana	100	211	217	250		255
Iowa	158	137	[illegible]	255	231	171
Kansas	63	88	56	61	64	72
Kentucky	0	72	17	21	18	3
Louisiana		2		7	8	1
Maine	1	32	20	15	11	16
Maryland	21	22	1	10	25	21
Massachusetts	637	193	166	[illegible]	168	430
Michigan	144	157	288	195	165	20
Minnesota	157	102	174	95	95	65
Mississippi				2	2	1
Missouri	147	84	218	[illegible]	293	375
Montana	[illegible]	17	40		6	11
Nebraska	10	6	4	47	58	16
Nevada	[illegible]	1	2		1	4
New Hampshire	7	25	[illegible]	23	15	1
New Jersey	228	201	50	18	102	472
New Mexico		4	5	1	6	
New York	[illegible]	549	565	681	752	647
North Carolina			1	1		
North Dakota	10	8	29	11	8	1
Ohio	14	[illegible]	[illegible]	190	375	543
Oklahoma	1		[illegible]	14	194	9
Oregon	10	1	[illegible]	11	5	9
Pennsylvania	[illegible]	744	721	903	491	987
Rhode Island	64	0	11	21	9	89
South Carolina				1		
South Dakota	4	10	15	[illegible]	8	10
Tennessee	4	1	[illegible]	6	4	5
Texas	2	2	4	11	7	11
Utah	2	22	25	18	0	12
Vermont	15	14	10	14	18	13
Virginia		11	5	8		5
Washington	21	25	15	25	2	28
West Virginia	13	16	54	64	27	23
Wisconsin	150	215	250	155	150	187
Wyoming	1	2	8	[illegible]		1

NON-FATAL INJURIES

There were 5,460 non-fatal injuries this year, an increase of 1,211 over last year. Only 11 persons were totally blinded this year, being one less than last year and one-half as many as in 1906. There were 93, however, who lost one eye each, an increase of eighteen over last year. Fifty-seven people lost a leg, an arm or a hand this year, this being the same number as last year. One or more fingers were lost by 184 persons, a decrease of 53 below last year. The giant cracker holds the first rank as a cause of mutilating wounds and is responsible for the majority of losses of eyes, hands and fingers during this celebration of the Fourth. In the awfulness of its destructiveness, the giant cracker is equaled in a few instances only by the explosions of home-made cannon. The fact that the wounds made by the giant cracker are so lacerated and laid open is the very reason it does not cause more lockjaw. Then, also, these cases are taken to the physician, while the supposedly insignificant wounds made by blank cartridges are neglected. This year 1,793 accidents, including 23 deaths and 5 cases of lockjaw, were due to the giant cracker.

Firearms caused 481 accidents, including 30 killed and 3 cases of lockjaw. Of the total number thus injured 194 were struck by stray bullets from the reckless shooting of firearms by others. Toy cannons caused 399 injuries, including 7 killed and 4 cases of tetanus.

TABLE 7.—NUMBER REPORTED KILLED AND INJURED IN OUR LARGEST CITIES

City	Population (Census Bureau 1906)	1907		1908	
		Killed	Injured	Killed	Injured
New York, N. Y.	[illegible]	22	422	11	[illegible]
Chicago, Ill.	2,049,185	16	151	12	202
Philadelphia, Pa.	1,441,735	7	215	6	146
St. Louis, Mo.	649,320		181	4	229
Boston, Mass.	602,278	1	53	6	130
Baltimore, Md.	553,669	0	5	1	10
Cleveland, O.	460,327	[illegible]	63	12	[illegible]
Buffalo, N. Y.	381,819	0	18	3	11
Pittsburg, Pa.	375,082	10	85	0	50
San Francisco	364,667			0	11
Detroit, Mich.	[illegible]	2	46	0	10
Cincinnati, O.	345,230	2	83	1	112
Milwaukee, Wis.	317,903	2	[illegible]	0	70
New Orleans, La.	314,146	0	8	0	4
Washington, D. C.	307,716	0	12	0	21
Newark, N. J.	[illegible]	1	129	2	81
Minneapolis, Minn.	273,825	0	13	0	10
Jersey City, N. J.	237,952	0	31	5	4
Louisville, Ky.	226,129	0	13	0	10
Indianapolis, Ind.	213,154	1	31	1	14
St. Paul, Minn.	203,815	0	20	0	15
Providence, R. I.	205,215	0	20	1	21
Rochester, N. Y.	185,701	0	12	0	10
Kansas City, Mo.	182,[illegible]76	1	16	0	[illegible]
Toledo, O.	[illegible]	1	5	0	8
Denver, Colo.	151,920	0	8	0	15
Columbus, O.	115,114	5	[illegible]	0	5
Allegheny, Pa.	145,240	0	0	0	0
Worcester, Mass.	130,078	1	6	2	20
Memphis, Tenn.	12[illegible],018	0	0	0	[illegible]
Omaha, Neb.	124,167	0	25	0	10
New Haven, Conn.	121,227	0	2	0	0
Syracuse, N. Y.	118,880	0	20	0	14
Scranton, Pa.	118,692	0	5	1	17
St. Joseph, Mo.	118,004	1	[illegible]	1	11
Paterson, N. J.	112,801	1	23	2	31
Portland, Ore.	109,884	0	2	0	[illegible]
Fall River, Mass.	105,912	0	0	0	12
Atlanta, Ga.	104,984	1	4	0	[illegible]
Seattle, Wash.	101,169	1		0	1
Los Angeles, Cal.	102,479	0	[illegible]	0	40
Dayton, O.	100,733	0	11	0	11
Totals		84	1,88[illegible]	71	2,107
Totals Elsewhere		80	2,23[illegible]	92	[illegible]
Grand Totals		164	4,210	16[illegible]	5,460

TOTALS IN CHIEF CITIES

This year Table 7 has been added, showing the number reported killed and injured in the largest cities during the past two years. The population figures are taken from the U. S. Census Bureau's estimate of 1906. These figures will be of special interest from year to year, since they will show the results of the adoption and enforcement of ordinances restricting or prohibiting the use of fireworks. Chicago and Cleveland had 12 deaths each this year New York had 11, Philadelphia and Boston had 6 each, Jersey City had 5 and St. Louis had 4 killed In 1907 New York City had 22 killed, Chicago had 16, Pittsburg had 10, Philadelphia had 7, and Columbus (Ohio) had 5 killed

Of non-fatal accidents this year Philadelphia leads with 426, followed by New York with 316, St Louis with 229, Chicago with 202, Boston with 190, Cincinnati with 112 and Cleveland with 93 In 1907 New York had 422, the largest number of non-fatal injuries, followed by Philadelphia with 248, St Louis with 189, Chicago with 151, Newark with 129, Milwaukee with 93 and Pittsburg with 88

TETANUS FROM OTHER THAN FOURTH OF JULY INJURIES

Besides the cases of lockjaw due directly to Fourth of July injuries, many other cases were reported this year which occurred during the Fourth of July season, but which were due to penetrating injuries from nails or splinters, to crushing injuries, or to other causes There were 166 such cases reported this year, as compared with 94 last year and 60 in 1906 The increase may be largely due to a more complete reporting of such cases rather than to an actual increase The apparent increase, however emphasizes the fact that in the treatment of all penetrating wounds the possibility of tetanus should be borne in mind and prophylactic measures employed

Of the 166 cases of tetanus due to other than Fourth of July injuries Ohio reported 23, Pennsylvania 21, Illinois and New York each 17, and Missouri 12 Altogether 28 states reported cases Table 8 shows these cases by states and will be interesting for comparison with Table 2

TABLE 8—CASES OF TETANUS FROM OTHER CAUSES

	1908		1908
Alabama		Nevada	
Arizona		New Hampshire	
Arkansas	2	New Jersey	7
California	4	New Mexico	
Colorado	[illegible]	New York	17
Connecticut	2	North Carolina	1
Delaware	2	North Dakota	1
District of Columbia		Ohio	[illegible]
Florida	2	Oklahoma	
Georgia		Oregon	
Idaho		Pennsylvania	21
Illinois	17	Rhode Island	
Indiana	6	South Carolina	
Iowa	2	South Dakota	2
Kansas	4	Tennessee	
Kentucky	5	Texas	4
Louisiana	1	Utah	
Maine		Vermont	
Maryland	3	Virginia	4
Massachusetts	[illegible]	Washington	2
Michigan	4	West Virginia	
Minnesota	4	Wisconsin	5
Mississippi		Wyoming	
Missouri	12		
Montana		Total	166
Nebraska		States reporting cases	29

RESTRICTIVE MEASURES

As a result of the extensive publicity in regard to Fourth of July injuries, many efforts are being made to lessen or prevent this annual carnage Gradually but surely the lines are being drawn closer, and more restricting ordinances are being adopted each year Many cities prohibit the toy pistol and the use of firearms Many limit the size of the giant firecracker Other cities limit the time of celebration to the one, two or three days around the Fourth, while two cities, Baltimore and Toledo, have practically prohibited all fireworks with the result that where formerly large numbers were injured annually now the accidents in those cities are comparatively few, most of those reported having occurred in the outlying suburbs not directly under the jurisdiction of the city ordinances Other cities are said to have passed prohibiting ordinances, but the number of injuries reported indicate that they have not enforced them Following an unusual number of fatalities this year, Cleveland has passed a prohibitory ordinance which should be strictly adhered to and enforced, although it is understood that business interests" are trying to have it repealed

PREVENTION BY SUBSTITUTION

Another method is that adopted by St Paul, Detroit and other cities, whereby efforts were made to change the form of celebration At St Paul it is said that just before the Fourth a mammoth children's meeting was held at the Auditorium which seats 10,000 people Here bands were playing, flags and bunting were displayed, confetti was showered about from boxes and balconies and a generally good time given, after which several coupons were given to each child, which on the Fourth would be accepted at Harriet Island in exchange for toys or refreshments The Detroit plan was somewhat similar, but details were not learned It is interesting to note that comparatively few injuries were reported from these cities this year

SUBSTITUTION AND RESTRICTION COMBINED

Possibly a combination of the two methods would solve the problem Have the parades, the flags, the bunting the picnics and the children's outings, but also prosecute the idiot with his giant cracker and the hoodlum who recklessly fires off his revolver, as well as all others who persist in death-dealing methods Let the shooting of fireworks be limited to displays in the evening in charge of adults experienced in their handling

How could we better celebrate the anniversary of our independence than by an extensive display of flags and bunting? Give to the boys bright colored soldier caps and uniforms Give to the girls bright colored parasols and aprons Already this modern sort of celebration is on the increase, as evidenced by the statements frequently made by dealers, who say, "Never have we sold so many flags and lanterns" In one of our large cities the remark was commonly heard "Never have I seen so many houses decorated or so many flags displayed" Really, would it not be better for all to boycott the fireworks counter and patronize the flag store? Let us at least unite to secure a more sane and, therefore, a more patriotic celebration of the Fourth of July

Therapeutics

VOMITING OF PREGNANCY

A series of papers in the *New York Medical Journal* for Dec 28, 1907, and Jan 4, 1908, *completely cover* this subject, and the following includes the essential points brought out by the different contributors

Etiology is touched on but little and perhaps well so since the subject is treatment, and the cause, other than that it is unquestionably an intoxication is largely speculative There is, however, a considerable number of factors which may modify the underlying cause of this condition so that it ranges from a trivial affair, *amenable to domestic remedies* to a condition which baffles the most expert treatment and taxes the facilities of the most complete institutional equipment Among these may be named reflex influences such as are occasioned by pressure on nerves connected with the uterus, stomach and other abdominal viscera (and of these the most important are those due to displacement of the uterus and its adnexa) neurotic or hysterical, and toxemic. The latter naturally gives the most trouble because, primarily an autointoxication, it is almost invariably a combination of several evils.

The condition most frequently makes its appearance between the third and fifth week of pregnancy.

The liver, the great physiologic filter, has at this time a more than ordinary amount of work to do and not infrequently is at fault through inability to care for the extra burden put on it. Then, too, elimination is greater than under any other conditions, and the organs of elimination being unduly worked, may be inadequate.

Also, into the blood are poured the waste products of fetal origin, and to combat and eliminate these more work must be done.

First, then, a complete history of the patient should be taken, an opinion formed as to her normal mental or nervous temperament, and a thorough and complete physical examination made. If the condition is due to hysteria, the patient should generally be isolated and moved if possible to a situation where she will have an entire change of surroundings and attendants, the treatment then becomes mostly hygienic and suggestive.

If examination reveals a misplaced uterus (and probably a retroversion is that most frequently found), replacement should be made immediately and a properly adjusted pessary placed to maintain the correction until such time as the enlarging uterus will retain its proper position unaided. Occasionally adhesions may be found which prevent the manual correction of the fault. The condition then becomes more formidable, and recourse must be had to surgery. The same holds good in incarceration, and in this condition not infrequently corrective measures result in abortion. Erosions of the cervix, cicatrices, and polypi may be causes of the nausea and vomiting, and these if found should receive proper attention. However, surgical procedures, unless of a most trivial nature, should be reserved as a last measure since they are liable to induce abortion, as are also such procedures as may require either a tampon of any considerable size, or packing of the vagina.

If the vomiting still persists after all corrective measures possible have been made, there remain two conclusions: the vomiting is either idiopathic, or due to autointoxication. The former term, of course, dodges the issue, but nevertheless brings the treatment under two headings, and the conclusion to be drawn from the mass of statistics seems to confirm unquestionably the comparative uselessness of drugs to meet either condition. Almost everything has been used, and with no further benefit generally than a temporary mitigation of the symptoms.

The two great difficulties that confront us are the maintenance of the patient's nutrition and the combating of the prostration caused by the vomiting. Under whichever heading we choose to meet the case, hygienic measures stand pre-eminently first and nothing should be omitted which tends to their furtherance. The diet should be of the simplest, and milk should form its bulk. One after another of the simple dishes must be tried, to be discarded if they are not retained. When the patient is first seen, if the stomach is washed out and nothing allowed but water for twenty-four hours, the bowels being thoroughly cleaned out meanwhile, milk will generally be retained. Just before giving the milk a small dose of cocain, 0.01 gram (1/6 grain) or chloretone, 0.25 gram (4 grains) may cause it to be retained. If it is retained, one or the other of these drugs may precede the further administration of food, lessening the dose each time, and, not infrequently, when a placebo is ultimately substituted for them, the food will be retained as well. Sooner or later, unless conquered, even these so-called idiopathic cases are found to have their etiology in autointoxication and elimination becomes the main point of all treatment.

The urine of course should be examined with great frequency and close watch should be kept on the elimination of solids, but an undue anxiety because of their diminution should not be felt when the intake of food or the food retained is small. A due regard to this should be kept in mind.

The bowels should be moved freely once a day. A single dose, 0.25 gram (4 grains) of calomel with a little bicarbonate of soda, 0.25 gram (4 grains) is preferable if it can be retained; if not, a daily enema must be given. If there appears to be any sluggishness on the part of the small intestines 0.001 gram (1/60 grain) of physostigmin salicylate should be given hypodermatically once or twice a day, as may be sufficient.

Daily warm baths, with massage, plenty of fresh air, the patient kept in bed, the avoidance of the odor of cooking food and the avoidance of all measures that tend toward excitement are of advantage. Counter irritation by mustard plaster or turpentine stupes placed over the stomach is generally a help and sometimes efficient. Also carbonated or effervescing drinks will often be retained when "still" liquids are vomited.

The one drug which has been of most service appears to be sodium (or potassium) bromid. It is best given in one gram (15 grains) doses, well diluted, by mouth, if possible; if not, by rectum, and repeated every two or three hours until the vomiting is conquered or the treatment proves useless.

Although bromids appear to be the most efficient drug, thyroid is not infrequently of use. It should be tried in small doses, say 0.20 gram (3 grains), and if retained, perhaps larger doses, up to 0.50 gram (7½ grains) every four hours for a sufficient number of times to prove or disprove its efficiency. When successful it acts by neutralizing some autoelaborated toxin, which toxin or toxins are present because of an insufficiency of the thyroid gland.

The food, as above stated, should be liquid, and preferably milk, while buttermilk (cold), koumiss, and egg albumin lemonade are useful. Generally small quantities only should be given, and at frequent intervals. When the liquid food becomes well tolerated, semi-solid food and the simpler dishes, one after another, may be tried.

When all measures have failed to control the vomiting, and before the patient has actually reached a dangerous condition of prostration, consultation should be had and measures should be taken to empty the uterus. Naturally, of course, one waits as long as possible before doing this, and not infrequently waits too long, hence this caution.

ECLAMPSIA

There is probably no condition that the medical man has to cope with that makes, from prodrome to sequelæ, such demands on his capabilities, his judgment, and his fact as does the symptom complex of this toxemia, for intoxication it is, poorly though we may understand it and little as we may know of its etiology. Having its cause in some wrong going chemistry of either internal secretion or metabolic function, or both, its treatment must necessarily be elimination until an increased knowledge of the condition permits it to be corrective.

When it is possible to take the patient to a hospital this should be done at once, for a case of eclampsia can at any moment present conditions which even the resources of a hospital, with its trained attendants, find difficulty in meeting, and these conditions can change with a rapidity which none but institutional resources may attempt to meet. Whatever difference of opinion there may be concerning other features of this condition there can be no question that more cases are saved under institutional treatment than under any other, and only by reason of their increased facilities. If it be impossible to take the patient to an institution, and home treatment becomes a necessity, then the first thing to do is to prevent self injury to the patient by instructing some one present how to hold a towel, a cork, or a rubber eraser between her teeth, and to keep her on the bed.

Next, a thorough examination should be made, and if there are convulsions present or the examination starts one, a sufficient amount of chloroform may be given to allow the examination to be completed, and that thoroughly, for it is more important to know the exact conditions present than to start any treatment with an incomplete knowledge of the case.

The examination having been completed, if delivery is indicated the cervix can usually be completely dilated under chloroform without instrumentation, (*i. e.* with the hand), forceps applied, and delivery completed. The placenta should generally then be removed, not waiting the usual twenty minutes, and the method of Credé is preferable.

Generally there is a tendency to profuse hemorrhage, and the placenta having been removed, the uterus should be thoroughly irrigated with hot physiologic saline solution and it and the vagina packed with sterile gauze. However, the packing being in readiness, it is good judgment to wait a few moments before using it to see if the hot irrigating solution provokes sufficient contraction to stop the bleeding, for if it does, there is avoided the presence of an unnecessary foreign body in the uterus.

Laceration, if present, should generally be repaired at once, always if it has caused hemorrhage. If not, the patient's condition may occasionally make the postponement of the repair advisable.

If indications for immediate delivery are not found, *i. e.* if the cervix is not much shortened or not much softened, the os undilated, and few or no uterine contractions (and this last is the most important determining factor, since uterine contractions appear to excite the eclamptic convulsions) eliminative treatment should be started. If there is stertorous breathing, with small pupils, and slow, full, high tension pulse, and if the patient be more or less comatose, "bleeding" is indicated, and from 150 to 250 c.c. of blood should be removed, but whether or not this should be replaced with physiologic saline solution only the condition of the patient at the time can determine, certainly not if there is any edema. If it seems desirable, the quantity of saline introduced should be not less than three or four times that of the blood withdrawn. Next flush out the colon with saline solution and allow 1000 c.c. or more to remain for absorption, provided of course that there is no edema, and particularly should the lungs be carefully examined with this in mind. Next, wash out the stomach if possible, and if done at all do it thoroughly, leaving in it 0.50 gm. (7½ grs.) of thyroid extract and 0.40 gm. (6 grs.) of calomel, with a little sodium bicarbonate. Then apply the hot pack, and when perspiration ceases, usually in about half an hour, dry the patient's skin thoroughly and keep her between blankets.

If thought advisable, veratrum viride may be given hypodermatically, in 0.5 c.c. doses until 2 c.c. have been given. The hot pack may be repeated in two or three hours if necessary, and if there is vomiting the stomach may again be washed out, leaving in it another dose of thyroid, and a smaller dose of calomel should there be reason to believe that the first dose was vomited. In short, this eliminative treatment must be kept up until the uterus can be emptied. If it seems inadvisable to wash out the stomach the thyroid and calomel may be given by mouth in the dose above referred to, and the thyroid repeated every three hours until six doses, or 3 grams have been given. It should then be discontinued.

Bladder distention is common and must be borne in mind, catheterization frequently being necessary every six or eight hours for several days after delivery.

Should stimulation be necessary, whisky by rectum and adrenalin hypodermatically, with or without physiologic saline solution, may be used to advantage. Strychnin is generally advised, but its use in conditions of cerebral excitation seems inadvisable. Certainly not more than one dose should be given and that not over 1/30 of a grain. If further stimulation appears to be needed, another drug should be substituted for it—either caffein hypodermatically, or as black coffee by the mouth, and this may be followed, if another change seems advisable, by the hypodermatic use of camphor in olive oil (1 c.c. of the saturated solution), and this may be continued at half-hour intervals.

After delivery, if a sedative is needed, there is none better than a combination of sodium bromid, 2 grams (30 grains), and chloral hydrate, 0.50 gram (7½ grains), well diluted and given by rectum. This may be repeated in an hour if necessary, but a single dose is generally sufficient. Morphin is only too frequently advised and given, but *in such a condition as this it would* seem distinctly contraindicated. There is no pain to combat, and usually the patient will sleep from mere exhaustion if her "nervousness" is controlled.

The quantity of morphin required to control this nervousness will of necessity be altogether more than necessary to meet every other condition, while on the other hand, if her condition is approximating coma, morphin becomes about as dangerous a drug as could be given her.

When delivery is completed the danger is by no means over, and a careful watch of the patient is necessary, for it must be remembered that the sequelæ of this condition are numerous and a patient can not be called out of danger until at least ten or twelve days have passed, and prognosis at any time before this is little more than a guess.

Should the child survive, it is in all probability also toxic. It should be given water freely, and also, perhaps, colon irrigation once or twice daily. Prognosis as to its survival should be absolutely declined.

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SATURDAY, SEPTEMBER 5, 1908.

THE ANNUAL FOURTH OF JULY RECORD.

Our sixth annual compilation of statistics on the injuries and accidents of the Fourth of July, in this issue, contains several interesting features. In the first place it shows that the steady decrease in tetanus, which has been recorded each year, seems now to have stopped, the number being practically the same as last year. However, this minimum number of tetanus cases resulted from the highest number of injuries that has yet been reported in any year since the compilation of statistics was begun, so that the actual proportion of tetanus is really somewhat less than in any previous year. That the total number of injuries, and also the total number of deaths from causes other than tetanus, were both greater than in any previous year since 1903, in spite of the widespread agitation against dangerous celebration that has been waged by the public press for years, is striking evidence of the callousness and recklessness of the public. Every one of these 5,460 injuries, 108 deaths, 104 blinded or half blinded unfortunates represents an absolutely unnecessary and wanton sacrifice to a senseless and barbaric notion of what constitutes a "good time," and is an additional evidence of the cheapness of human life in the United States. Furthermore, the greater part of these casualties represent actual violations of the law, for there are few towns or cities which have not statutes forbidding the use of revolvers and cannon crackers, at least, in Fourth of July celebrations. But no matter how much agitation there may be, or how much legislation the "city fathers" may provide, the "spirit of independence" continues to manifest itself by violating every law of public safety or common sense, and patriotism is attested by loss of lives, fingers, eyes and cuticle. All this absurd personal and civic mutilation is, after all, but one of the many manifestations of the disregard for life and property with which our country continually shocks and amazes the rest of the world.

On the other hand, we take much satisfaction in the continued success which the medical profession has met in its endeavor to hold in check the tetanus epidemic, for, while the deaths from other causes have increased from 60 to 108, the tetanus mortality has dropped in six years from 406 to 55. We have made extensive inquiries into the treatment received by those injured in Fourth of July accidents, and have yet to learn of a single case in which tetanus developed in a person who had early received a prophylactic dose of antitoxin. The successful experience with the prophylactic use of antitoxin after this class of injuries, according to both current medical literature and personal communications, has led to its much more general application in cases of accidents from other causes, in which tetanus infection seems possible; and here, too, the results have been favorable. Curative treatment still remains deplorably ineffective in Fourth of July tetanus, in which the infection seems to be of exceptional virulence as shown by the short period of incubation which averaged but seven days, and the rapid course of the symptoms which terminated fatally in 36 hours on the average. Recovery rarely follows any form of treatment of tetanus when the incubation period is less than ten days, but becomes more and more frequent as the period of incubation lengthens, a fact that must be considered in estimating the value of any method of treatment.

Besides the continued success with the prevention of tetanus, perhaps the most hopeful feature of this year's record lies in the reports from a few cities where earnest efforts have been made to hold the violence of the annual celebration in check. Baltimore and Toledo are reported as having practically prohibited all fireworks, with a very satisfactory diminution in the accidents of the day. With the example of these cities before them it is to be hoped that other communities will see the practicability of refusing longer to tolerate the useless disorder, slaughter, destruction and waste to which they have submitted every year without making any honest effort to suppress them.

MARITAL INFECTION IN TUBERCULOSIS.

If tuberculosis is actively contagious it would appear that, of all conditions, the marital relation would afford the most favorable opportunities for contracting the disease. If either of the partners is a victim, the chances of the other becoming one would seem to be especially favorable. Nevertheless statistics apparently do not support this probability to such an extent as would be anticipated, and it is in the experience of almost every observer that the percentage of husbands infected by wives and *vice versa* is not nearly so great as the opportunities would seem to render almost inevitable. This has been noticed in various medical articles, and one or two investigators at least have attempted to handle the statistics in a scientific way, as, for example, Weinberg, who used the actuarial data as to life expectancy in his discussion of the subject. There are, however, so many possible factors to be considered that positively accurate conclusions have been lacking and in most cases the figures were not sufficiently extensive to warrant drawing such conclusions.

The latest published investigation is that of the late

Mr. Ernest G. Pope, of the Adirondack Sanitarium, which has been very extensively edited and revised by Professor Karl Pearson in the Draper's Company Research Memoirs under the title of "A Second Study of the Statistics of Pulmonary Tuberculosis: Marital Infection." Mr. Pope in his studies took up the subject of the influence of assortative mating and this has been much more extensively developed by Professor Pearson in his additions to the paper. It is a well known fact that there is a tendency among the subjects of certain diseases to select in marriage those with like marked tendencies to themselves. This has been especially noted among the insane, and while apparently it was not admitted by Mr. Pope as a factor to any great extent in producing marital tuberculosis, Professor Pearson shows that it must be considered. His conclusions are summed up in the slightly modified words of Mr. Pope: "It would seem probable then that (1) there is some sensible but slight infection between married couples; (2) this is largely obscured or forestalled by the fact of infection from outside sources; (3) the liability to the infection depends on the presence of the necessary diathesis: (4) assortative mating probably accounts for at least two-thirds and infective action for not more than one-third of the whole correlation observed in these cases.

"But demonstration of this result depends on the acceptance of the inherited diathesis to be effective, and the existence of assortative mating of equal intensity in the cases of want-of mental balance must prevent dogmatism." He speaks of the necessity of more complete data in such statistics. It is especially important, he says, that the age of husband and wife at marriage and the age at onset and death should both be recorded. Similar data as to the age at onset and death of the parent at the birth of the child and the age at onset and death of the child should also be secured. The family history is essential; "if we find that the marriage of two ultimately tuberculous persons took place before either was suspected of the disease and that there is in such cases a larger percentage of family histories of tuberculosis than in the case of non-married tuberculous individuals, we should have definite evidence of the assortative mating that seems probable. If, on the other hand, the percentage were smaller we would have definite evidence for the infection theory."

In an appendix, tables are given which show that the insane, epileptic, markedly eccentric, or alcoholic, do tend to mate together, and while more extended data on this point are still wanted, the facts so far as ascertained should be, as Professor Pearson says, vigorously impressed on those who dogmatically assert that the association of tuberculous husband and wife beyond a due proportion in a population taken at random can only be attributed to infection. They must be prepared to admit that insanity is still more transmissible between husband and wife, though in all forms except perhaps paresis and some toxic insanities, one does not usually think of attributing it to a bacillus or to any other organism.

Professor Pearson's views on the importance of the hereditary element, or perhaps we should say, the congenital diathesis, are well known, but he has in his favor the results of the scientific discussion of statistics. There is a wide field yet to be cultivated, and perhaps the question can be considered absolutely decided only after a much larger amount of material has been obtained for investigation. The subject is an excessively complicated one when we take into account all the possible factors which will have to be considered in its solution. The ubiquity of the tuberculosis infection is in itself a very important factor. If the general practitioner could be thoroughly interested in such questions, and especially in this question of tuberculosis, which is probably the most important disease afflicting mankind at the present time, and could be induced to make the needed careful observations and records, data might be obtained that would settle all such questions as the etiology, etc., beyond cavil. At present it would seem to be fairly well established, if statistics discussed according to the mathematical formulas of probability are of any value, that consumption is not actively contagious between husband and wife, and that a certain previous constitutional condition or predisposition is essential for its contagion to act in any case. The question of an acquired immunity, of course, intervenes here and still further complicates the matter, but probably does not practically affect the general conclusions above stated. It may be perhaps a subject amenable to statistical investigation.

We may decry statistics, but the fact is that all our certain knowledge in these matters of sanitary importance is obtained only through the proper application of their laws. Intermarriage of consumptives or those of known predisposition to the disease should be discouraged, not only on account of the danger of propagating offspring with like pathologic tendencies, but also because of the actual physical disabilities of the tuberculous, especially in the female, for fulfilling the duties of married life. There still remains, also, as stated above by Professor Pearson, a certain possible risk of contagion, though this has apparently been overestimated. The paper emphasizes a fact hitherto little appreciated—the possible danger from selective preference of the tuberculous for each other in choosing married partners, with its consequent bearings on the propagation of the disease.

REVOLVING HOUSES.

Somewhat more than twenty years ago a popular farce was constructed on the "wildly fantastical" idea—as the authors termed it—of a summer hotel which was made to revolve by means of a windlass and mule power. Since then revolving habitations have been designed and constructed in sober earnest: they have been made to turn on pivots so that their rooms could face in any direction. Dr. Pellegrin and architect Petit, both of Paris, together devised such a house; in its axis of rotation there was a shaft, through which passed the water pipes. A gas engine moved the platform on which the structure was erected, and the machinery could be harnessed to clockwork. Such a house was intended especially for invalids for whom it was most appropriate. Less ambitious "shelters" having one of the four sides entirely open, have long been in use in the outdoor treatment of consumption, whereby the sufferer can easily bask in the sunshine, or can shield himself from snow, rain or unduly fierce winds—an excellent contrivance for the sick.

It is now planned[1] to build on the northern shore of Long Island, New York, a house which, by means of electricity, will revolve on a pivot. One will need but to press the button for the view to be changed or the breezes to be caught, as may be desired. There are to be noiseless ball-bearings, and bells will tinkle on the piazzas to warn those about to leave or enter whenever there is to be a turning. The lawns will be so laid out that the front entrance will fit at any point of the compass. The scheme is the result of "many years of thought" on the part of the projector, and has grown out of a desire for "genuine home comfort."

On little reflection one will conclude that the ideal state projected will not be realized in such a house. In getting the shade for the room in which he is luxuriating, the owner, unless he lives like a hermit, will be sure to inflict the glaring sunshine on someone else. Nor would the lack of "genuine home comfort" be experienced only by guests or other members of the family. Should the owner himself, after dining out, not wisely but too well, arrive to find the front door, which he left facing due north, supplanted by the tradesmen's entrance, it is not hard to imagine the mental anguish that would be experienced in attempting to find a keyhole which had actual as well as psychic instability. The sight, too, of the iceman, well loaded with his product, racing around the gravel walk in a vain effort to reach the rear entrance while he was relentlessly pursued by the front piazza, would cause one to question whether a more conventional, if less exciting, homestead might not be desirable.

THE HOBBIES OF PHYSICIANS

Hobbies *apart from medicine* should be developed by the physician during his virile years, so that in the afternoon and evening of his life they will sustain and comfort him, and provide such light interest and occupation as are essential to most venerable men who have in their prime been of a robust and achieving habit. Many examples from the varied walks of life, of such fads and hobbies, come at once to mind. Salisbury knew much of electricity, Gladstone of Homer, Chamberlain of orchids. Balfour is immersed—literally, some fear—in psychic research, Lodge has become absolutely submerged in this regard. Joseph Choate knows a great deal more than the law, that is why he is so excellent a lawyer, and why it has been said that there are three kinds of lawyers—those of the old school, those of the new school and Choate. Billroth was a superb pianist, Strumpell is a clever violinist; many among our colleagues are excellent performers on musical instruments, and are all the better surgeons and physicians, for their genial and humanizing accomplishments, all the better qualified to comprehend the sufferings they must alleviate. To have a hobby of any sort, one need not be a producer or originator; to be an appreciator will be all-sufficient. Especially with regard to literature and the arts would it be well that the ambition to be original should not generally prevail, " 'tis better so,' we might well observe with Mulvaney, when we reflect on the present appalling literary over-production. We had best offer up all our originality to Medicine, who is an exceedingly jealous mistress; as one will surely find who would presume to exalt his hobby from the secondary position it should occupy, above her claims. But we can all be appreciators. A taste for literature is one of the greatest sureties of a happy old age. There was a man who, having read but one of Thackeray's books, deliberately refused to read any of the others, reserving for his latter years a substance so productive of quiet pleasure. Another old gentleman kept a diary, in which he preserved carefully the dates when he saw the first buds on his trees, when the first robin appeared; when he heard the first bobolink. "Do not," says Osler, "become too deeply absorbed in your profession to exclude all outside interests. No matter what it is, have an outside hobby. When tired of anatomy refresh your minds with Holmes, Keats, Shelley or Shakespeare." And to these may well be added the works of our fellow professionals, Oliver Goldsmith, Sir Thomas Browne, Weir Mitchell and Sir James Paget. It is the all-round man who succeeds best, in medicine as elsewhere—the physician who is thoroughly informed in his own work, and who knows, besides, something regarding the things which are vital to others.

PUBLIC OPINION AND THE FOURTH OF JULY HOLOCAUST

Public opinion is gradually arraying itself against the present intolerable method of celebrating the Fourth of July, whereby so many people, mostly bright, active children, are condemned to an agonizing death by lockjaw or to be killed outright, and whereby thousands annually are rendered blind, lose legs, arms, or hands or are otherwise maimed for life. That public opinion will eventually force the lessening or prevent this annual carnage is evidenced by the fact that each year more cities are adopting ordinances to restrict the sale of fireworks. Several large cities have limited the sale and use of fireworks to two, three or four days preceding the Fourth, while some have rigidly limited the nuisance to one day. Two cities, Toledo and Baltimore, have practically prohibited all fireworks for the past two and three years respectively, with the result that the numbers of killed and injured are far less than in other cities of equal size. This year Cleveland had a record of 12 persons killed and 93 injured. This so aroused the people that the city council has passed an ordinance prohibiting hereafter the use of any kind of fireworks in the celebration of the Fourth of July. We understand that manufacturers of fireworks are trying to secure a repeal of the ordinance, but it is hoped not only that the law will stand and be vigorously enforced but also that other cities will adopt and enforce similar measures.

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[1] New York Times, July 7, 1908.

Medical News

CALIFORNIA

Beriberi in Alviso.—Beriberi is reported present on ranches in Alviso, Santa Clara County, where 41 cases are said to exist.

Smallpox in Orphanage.—The Good Templars Orphans' Home, near Vallejo, has been quarantined on account of the appearance of 5 cases of smallpox.

Medicine Vendors Licensed.—The city council of Santa Cruz has passed an ordinance providing for a license of $50 a day for medicine vendors accompanied by shows.

Prohibits Sample Distribution.—Sacramento has passed an ordinance prohibiting the distribution of samples of drugs and medicine unless they are actually handed to adults.

Faculty Members Resign.—Ten members of the faculty of the College of Physicians and Surgeons, San Francisco, have resigned. This is said to be the culmination of internal dissension which has continued in the college since 1906.

Physicians Injured.—Dr. Alden M. Gardner, Belmont, sustained a dislocation of the right shoulder and contusions by being thrown from a street car in San Francisco, August 22.——Dr. William F. Jones, San Rafael, who was operated on for malignant disease of the abdominal cavity, is reported to be critically ill in the College Hospital, San Rafael.——Dr. Melvin B. Huff, Corona, while cranking his automobile August 4, suffered a Colles' fracture of the right arm.

Personal.—Dr. James W. Jesse has purchased the contents and appliances of the old Santa Rosa Hospital.——Drs. J. Underwood Hall and Roscoe A. Whiffen have resigned as members of the board of health of San José.——Dr. John T. Burns has been appointed a member of the board of health to fill vacancy.——Dr. Frank A. McMahon, chief surgeon of the United States Veteran's Home, Yountville, has resigned.——Dr. A. Lincoln Cothran has been elected president, and Dr. John T. Burns, secretary and health officer of the San José board of health.——Dr. Luther M. Leisenring has been made a member of the board of health of Placerville.

ILLINOIS

Chicago

Physician Exonerated.—Dr. O. J. Price was exonerated from all blame in connection with the death of a young child August 19. It was found that the prescription for creosote given by Dr. Price was filled by a druggist's clerk with 90 per cent. carbolic acid.

Communicable Diseases.—To the total of 246 cases of communicable diseases reported during the week ended August 29, diphtheria contributed 86, typhoid fever, 47, tuberculosis 41, scarlet fever, 37, whooping cough 13, measles 12, pneumonia 5, chickenpox 2, and diseases of minor importance, 3.

Personal.—Dr. and Mrs. Edward L. Moorhead and son have returned from Europe.——Dr. Jacob Frank has donated 400 volumes on medical and surgical subjects to the Columbus Hospital to provide a reference library for internes.——Dr. P. J. H. Farrell has been elected commander in chief of the Army of the Philippines.——Dr. Frederick W. Mercer was seriously injured by a fall from the third floor to the parlor floor of his house August 9.

Mortality of the Week.—There were 584 deaths reported for the week ended August 29, 9 more than for the preceding week and 32 fewer than for the corresponding week of 1907, the respective death rates being 14.9, 13.84 and 15.24 per 1,000. Chief among death causes were the following: Acute intestinal diseases, 173; consumption 65, violence (including suicide) 48, heart diseases, 47; cancer 33, and nephritis 31. Diphtheria and typhoid fever each caused 9 deaths, scarlet fever 5, and whooping cough, 1 death during the week.

KENTUCKY.

State Board of Health Meets.—The annual meeting of the State Board of Health was held in Louisville, August 21. The board resolved to levy an assessment on the members to defray the expenses of a commissioner to investigate the water conditions of the Ohio River and its tributaries. The secretary was authorized to make the selection and instruct the commissioner in his duties. The consolidation of the medical schools was endorsed and the requirements of the American Medical College Association were adopted by the board. The executive committee of the board will confer with a similar committee from the university regarding the curriculum. At the last state board examination 82 applicants appeared, one of whom withdrew, one was expelled for fraud, 45 passed and were licensed and 35 failed. The board is making an effort to prosecute all quacks and illegal practitioners in the state, especially some who are alternating in Kentucky, Indiana and Ohio.——On April 3 the board completed the thirtieth year of its existence. It was created in 1878 in order to cope with yellow fever. The board recommended the cooperation of physicians to obtain the placing of the names of Drs. Pinckney Thompson, R. W. Dunlap and R. C. Thomas in the Hall of Fame in the state capitol.

MARYLAND

Increase in Typhoid.—The state health department reports an increase in typhoid in July as compared with June of 120 per cent., and this is attributed to the prevalent drought and continued high temperature.

Hospital Not Needed.—The comptroller of the state, Dr. Joshua W. Hering, declares that there is no need for a hospital at Annapolis owing to the proximity of the city to Baltimore. The legislature last year appropriated $50 000 for a hospital at Annapolis, but the governor reduced the appropriation to $25 000.

State Medical Examiners Suggested.—The governor suggests the appointment of state medical examiners to visit factories in search of tuberculosis patients; when found the patients are to be treated free until cured or until death occurs. He proposes that a new department be created as an adjunct to the Bureau of Labor and Industrial Statistics. He also proposes segregation of the tuberculous insane.

New Building for State Society.—The work on the new building for the Medical and Chirurgical Faculty of Maryland has commenced. There is on hand $26 000 from the Osler fund, the Friedenwald fund, and paid subscriptions. The available unpaid subscriptions, the state appropriation and the estimated value of the present property amount to $35 000. The expenses so far have been $1 000, leaving available funds amounting to $60 000. Up to the present time 344 physicians of Baltimore, 37 physicians outside of Baltimore, 36 business men and 89 pharmacists have subscribed to the fund.

Resolutions.—At the August 20 meeting of the Baltimore County Medical Association resolutions were adopted setting forth the loss sustained by the association in the death of the late Dr. George Junkin Preston and condoling with his family.——At the same meeting resolutions were adopted that the Baltimore County Medical Association has among its members more physicians who are interested in the care and treatment of the insane than any other county medical society; that it views with alarm the proposed division of authority at the Springfield Hospital for the Insane; that it desires to express its most emphatic disapproval of this division of authority which it is felt would be a step backward in the care of the insane; that it registers its protest against this division of authority and expresses its confidence in its executive ability of the present superintendent, Dr. Joseph C. Clark, successfully to carry on the work begun so ably by the late Dr. George H. Rohe.

MASSACHUSETTS

Communicable Diseases.—An epidemic of diphtheria was reported August 24 at the South Athol fresh air camp.——Despite rumors to the contrary Boston is said to be free from scarlet fever.

Health Report.—During July there were reported in the state 893 deaths from infectious diseases, 110 deaths from acute lung diseases. 203 from tuberculosis. 30 from diphtheria. 20 from typhoid fever. *and 17 from measles.*

Personal.—Dr. Joseph H. Pratt, Boston, sailed from Liverpool, on his return. August 11.——Dr. Thomas E. Cavanaugh, Holyoke, is in Paris.——Dr. Benjamin T. Loring, Roslindale, Boston, has been elected a medical inspector of schools to succeed Dr. Henry M. Emmons.——Drs. Charles L S Swan and Michael Glennon are the medical members of the committee appointed by the selectmen of Stoughton, to investigate the *matter of a sewerage system for the town.*

MISSISSIPPI.

Election of Officers. At the annual meeting of the faculty of the Mississippi Medical College Dr William W Hamilton was elected president; Dr. Nathan L Clark, vice president; Dr. Samuel H. Hairston, secretary; O. W Bethea treasurer; and Dr. T. Alexander Brown, dean.

Practitioners Must Show License. Dr Samuel H McLean, Jackson, secretary of the State Board of Health, is preparing a circular to each county health officer, in which he calls attention to the section of the medical code regulating medical practitioners, and to the fact that the prohibition against practicing medicine without a state license is being disregarded, not only by older practitioners, but by medical students. He states furthermore that it is a matter of common report that men who have failed in the examination have returned to their communities or some other, and commenced *practicing medicine*

NEBRASKA.

State Board Appointments.—Dr. W H. Wilson Lincoln, has been reappointed by the state medical board as health inspector for the coming year, and Drs J H. Wallace and C I Ladd, Lincoln, have been made members of the dental board.

New Institution Formed.—The Eaton Laboratory for the Study and Prevention of Tuberculosis in Children has been organized in Lincoln as an auxiliary of the Nebraska Orthopedic Hospital. It is intended to accomplish three principal results: First, to make special study of the records of the results at the hospital and of the care of the tuberculosis children in general; second, to record children suffering with tuberculosis in Lincoln or elsewhere in the state, who are in need of special care, and give special instruction when advisable and to arrange with parents to have children placed in the hospital, and third, to conduct a campaign of education on all questions relating to health of children, and the cure of those who are ill with tuberculosis Hon. H N Eaton is president of the laboratory; Dr H. B. Ward, dean of the College of Medicine of the University of Nebraska, a member of the board of directors; and Dr H. Winnett Orr, assistant superintendent of the Nebraska Orthopedic Hospital, director of the laboratory.

NEW YORK.

Used Physician's Name.—George W. Doty, alias Dr James Doty, has been arrested for practicing medicine in New Rochelle under a false certificate and assumed name The original Dr. James Doty has been dead five years and was a graduate of the University of New York, class of 1857

Working Against Bovine Tuberculosis.—The commissioner of state agriculture has made plans for the eradication of bovine tuberculosis with the leading representatives of various farms and dairy organizations and the directors of agricultural colleges. Methods of educational work were discussed. The nature of bovine tuberculosis will be explained by competent speakers at farmers' institutes throughout the state, and demonstrations will be given.

Plans for Long Island Hospital.—Bayside, Long Island, is soon to have an up-to date hospital. A stock company has been formed for the purpose of the erection and maintenance of such an institution which will be incorporated under the title of the Bayside Infirmary Company. A lot has been purchased on Broadway overlooking Little Neck Bay. The hospital will be ready for occupancy by May 1, it is hoped. Physicians may send their patients here and care for them personally.

Buffalo.

Tag Day.—Tag day for the benefit of the District Nursing Association was held September 4. The public extended generous aid to this charity, appreciating the excellent work done in conjunction with the tuberculosis committee of the Charity Organization Society.

Personal.—Health Commissioner Wende, who, while on his way to attend the American Public Health Association at Winnipeg, Man., was taken ill and obliged to return to Buffalo, is still confined to his bed. Dr. George F. Cott is spending several months in Europe Dr. Charles Howard, chairman of the New York State Prison Commission, is ill in Buffalo.

New York City.

Bequest to Charity.—The will of Sigmund Rosenwald bequeathes $5,000 to the United Hebrew Charities, $1,000 to the Montefiore Home, and $500 to the Mount Siani Training School for Nurses.

Wants Prison Sentence Rather Than Fine. Dr. Darlington, Commissioner of the Health Department, has requested that hereafter violations of the pure food law shall be made punishable by imprisonment instead of by fine. He claims there are scores of groceries throughout the city that are selling jams and jellies in which sulphurous acid is used as a preservative.

New Rockefeller Hospital. Plans have been filed for the main hospital building and isolation annex of the Rockefeller Institute for Medical Research. The main building is to be a seven-story brick edifice, and the isolation wards will be in a two-story building connected with the main building by steel bridges. The estimated cost of the hospital is $350,000, the isolation annex $50,000, and the additional power house $4000.

Eye Trouble from Public Baths.—Dr. Herbert J. Knapp, oculist of the Eastern District Dispensary, says that at present there are a large number of cases of catarrhal conjunctivitis, due to bathing at the public baths in that vicinity. A sewer empties into the river a short distance above the bath. The attention of the Board of Health has been called to the existence of this epidemic and has urged the removal of the bath.

Tuberculosis Exhibit in Battery Park. The department of communicable diseases of the Health Department has just given a stereopticon exhibition in Battery Park for the purpose of helping along the war on tuberculosis. The show demonstrated graphically what the Health Department is doing at present to prevent, supervise and treat pulmonary tuberculosis, and to instruct the people how not to get the disease and how to avoid giving it to others.

Contagious Diseases.—There were *reported to the sanitary* bureau for the week ended Aug. 22, 437 cases of tuberculosis with 153 deaths; 157 cases of diphtheria with 12 deaths; 132 cases of typhoid fever with 14 deaths; 66 cases of measles with 5 deaths; 72 cases of scarlet fever with 5 deaths; 17 cases of whooping cough with 7 deaths; 7 cases of cerebrospinal meningitis with 3 deaths, and 13 cases of varicella, a total of 901 cases and 199 deaths.

Junior Sea Breeze Hospital.—Dr. L. R. Williams reports that the rapid recovery of the sick babies at the Sea Breeze Hospital has so depleted the infant colony that only 38 of the 65 available beds are at present occupied. All mothers of sick babies are urged to take advantage of the present accommodations and have their children treated. During the summer of 1907 the infant mortality resulting from summer complaint was reduced from 253 in 1906 to 226 last year, although the summer of 1907 was more disastrous in its effect on babies than the year previous.

PENNSYLVANIA.

Communicable Diseases.—Several cases of cerebrospinal meningitis were reported from Pottsville, August 24.——Typhoid fever continues prevalent in the Northampton County jail, Easton, where the fourteenth case was reported on August 25.——The typhoid fever epidemic in Spring City and Royersford does not show any sign of abatement. On the contrary, several new cases were reported during the past week. The state health board is in charge, and all houses are being placarded as soon as a new case is reported. Posters have been placed about the town warning the public to boil all water for drinking and cooking. The local water company has cleaned one-half of its reservoir and the entire water system will be thoroughly flushed.——Typhoid fever continues epidemic at Canonsburg and 34 cases were reported up to August 24. Six new cases were reported in the Morganza Reform School on the same day, making the total number of cases in that institution 34.——Typhoid fever is epidemic in the northeastern section of the city of Reading, and since August 1, 74 patients have been removed to the various hospitals while as many more are being treated at home.——In Wilkes Barre typhoid fever is also prevalent, and 7 new cases were reported August 28, making a total of 41 for the week. Dr. Coleman of the state board of health has charge of the investigation.

Philadelphia.

Vital Statistics for July.—During July the number of deaths reported was 2.598, and the total births for the same period was 3.505. The department of medical inspection ordered 432 fumigations, examined 26 cases for special diagnosis, collected 145 cultures, made 116 injections of antitoxin, and performed 27 vaccinations.

Guarding Milk Supply.—Dr. Neff, director of Public Health and Charities, is using every effort to safeguard Philadelphia from the danger of typhoid contagion, as the result of the epidemic of this disease in nearby towns. There are many dairy farms in the vicinity of the infected places, from which milk is shipped to the city. Specimens of this milk are collected daily on arrival and analyzed bacteriologically in the municipal laboratories.

New Children's Department for Woman's Hospital.—Plans and specifications have been prepared for a new department for children in the Woman's Hospital. The building will be a three-story structure of colonial design and will be built of red brick with blue marble trimmings. The interior wall and partitions will be of terra-cotta fireproofing. The building will contain eye, ear, throat, medical and children's clinics, with wards and baths on each floor. A diet kitchen and x-ray room are also provided.

Health Report.—The total number of deaths reported for the week ended August 29 aggregated 389. This is a decrease of 101 from the previous week, and a decrease of 45 from the corresponding week of last year. The principal causes of death were: Typhoid fever, 5; measles, 2; pertussis, 4; diphtheria, 5; consumption, 37; cancer, 23; apoplexy, 11; heart disease, 34; arteriosclerosis, 6; acute respiratory disease, 21; enteritis, 76; hepatic cirrhosis, 8; appendicitis, 4; Bright's disease, 25; premature birth, 10; congenital debility, 12; senility, 7; suicide, 3; accidents, 10; and marasmus, 7. There were 165 cases of contagious disease reported with 11 deaths, as compared with 120 cases and 11 deaths reported in the preceding week. Typhoid fever shows a marked increase, 102 cases being reported. This is nearly double the number reported in the previous week and four times as many as were reported in the week of July 17. Investigations made by Chief Medical Inspector Dr. Cairns show that in the great proportion of cases the disease was contracted outside of the city.

SOUTH DAKOTA.

Addition to Hospital.—An addition is being built by Dr. C. W. Hargens to his hospital in Hot Springs, which will increase the accommodations of the institution to 48 beds.

State Board Election.—At the annual meeting of the State Board of Medical Examiners, held in Deadwood, the following officers were elected: President, Dr. Leslie G. Hull, Watertown; vice-president, Dr. Harry S. Graves, Hurley; and secretary, Dr. Hiram E. McNutt, Aberdeen.

Personal.—Dr. Romeo R. Stevenson, Sioux Falls, was recently injured in a runaway wreck between Paris and Lyons, France.——Dr. A. V. Rock, Hoven, narrowly escaped drowning by the capsizing of a boat in the Missouri River, near Le Beau.——Dr. H. J. F. Bright, White Lake, has been appointed a member of the State Board of Medical Examiners.——Dr. Arthur B. Hawes, Elk Point, has been appointed examining physician on the board of lunacy of Union County, vice Dr. Leroy S. Moore, resigned.

TENNESSEE.

Colored Physicians Meet.—At the annual meeting of the Colored State Medical Society, held in Clarksville, July 14 and 15, Dr. Robert T. Burt, Clarksville, was elected president; Dr. R. L. Fields, Mason, secretary; Dr. Charles O. Hunter, Columbia, treasurer; and Dr. J. H. Hale, Nashville, historian.

Infectious Diseases.—An epidemic of smallpox is reported among negroes from McMinn County, near Niota, where 10 or 15 cases are said to exist.——An epidemic of throat trouble is reported from Henning, where several deaths have occurred.——Franklin is reported to have an epidemic of typhoid fever.

Medical Library.—After many years' work a modern medical library is almost ready for the use of physicians of Nashville and Davidson County. The library will have about 3,000 volumes and many medical journals will be kept on file. The library will be kept and cared for as a separate part of Carnegie Library.

Personal.—Dr. J. C. Drennen, Woodbury, was assaulted August 17 and sustained a fracture of the skull.——Dr. Rufus E. Fort, Nashville, has been appointed chief surgeon of the Tennessee Central Railroad.——Dr. William H. Smith, Memphis, has been appointed United States prison physician, vice Dr. Joseph T. Spence, resigned, to accept the position of surveyor of customs and collector of the port.——Dr. William E. McCampbell, Nashville, has been elected chairman of the Civic Sanitary League.

TEXAS.

Diphtheria Epidemic.—Diphtheria is reported from Livingston and in the neighborhood of Round Top and Littig.

Hospital for Denison.—The Denison Medical Society presented a proposition to the city council August 10, offering to furnish ground and equipment for a hospital, provided the council would appropriate $50.000 for the construction of a building and $3,000 a year for its maintenance.

Fire in Medical Journal Office.—The Continental National Bank Building, Fort Worth, in which the office of the *Texas Medical Journal* is located, caught fire July 19 and considerable damage was caused, but fortunately the files, indices, legislative records, etc., were not irreparably injured. Local officials view this as a demonstration of the importance of providing a fireproof depository for the records and library of the society.

State Board Meeting.—At the annual meeting of the State Medical Board, held in Fort Worth, August 3, Dr. James D. Osborne, Cleburne, was elected president; Dr. John D. Mitchell, Fort Worth, vice-president; and Dr. Marquis E. Daniel, Honey Grove, secretary-treasurer. A resolution was adopted providing that in cases where license to practice medicine in the state had been granted, and the individual to whom such license was granted uses it in the interest of advertising hospitals, the license would be revoked.

Personal.—Dr. and Mrs. John O. McReynolds and daughter, Dallas, returned from Europe July 29.——Dr. Manton M. Carrick, Dallas, has been appointed assistant quarantine inspector, with headquarters at Galveston.——Dr. George W. Emory, Bryan, was painfully hurt in a runaway accident August 11.——Dr. Cuvier Lipscomb, Denton, in stepping from a street car August 16, fell and sprained his hip.

UTAH.

Tuberculosis Not Admitted.—The regents of the University of Utah have promulgated a decree that no teacher, student or employé infected with tuberculosis will be admitted hereafter to the class rooms or buildings of the university.

Personal.—Dr. Robert S. Joyce, Ogden, has resigned from the board of education.——Dr. David C. Budge, Logan City, has been elected medical director of the new Utah-Idaho Hospital.——Dr. Edward J. Rich, Ogden, is said to be seriously ill with typhoid fever.

Health of Salt Lake City.—During July there were only 72 deaths in Salt Lake City, or 16 fewer than for the corresponding month of last year. The birth record for the month was 194 There were reported 86 cases of communicable disease, as follows: Whooping-cough, 46; smallpox, scarlet fever and diphtheria, each, 10; measles, 5, and typhoid fever, 4.

VIRGINIA.

Dispensary Established.—Drs. C. E. Verdier and Karl Osterhaus have established a surgical dispensary in Norfolk, working in connection with the City Dispensary and Infant Sanitarium at Virginia Beach.

Personal.—Dr. Stanley H. Graves, Norfolk, has been appointed chief surgeon of the Norfolk & Portsmouth Traction Company.——Dr. Charles W. Massie, Richmond, was thrown from his buggy August 17, and suffered a fracture of the skull and other injuries.

WISCONSIN.

Gives Hospital to City.—Charles B. Clark, Neenah, has given the city a hospital costing $75.000, in memory of his sister, who died several months ago.

Sample Ordinance Passed.—The ordinance framed by the commissioner of health of Green Bay, Dr. Henry Rhode, prohibiting the distribution of "patent" and proprietary medicines in the city, under penalty of fine, has been passed.

Communicable Diseases.—Kossuth reports 41 cases of smallpox and 16 houses are in quarantine.——At a meeting of Eau Claire physicians it was decided to quarantine all local cases of spinal meningitis, of which 15 cases are reported in the city.——Oshkosh reports an epidemic of typhoid fever.

Personal.—Dr. William A. Sickels, Milwaukee, has been elected professor of electrotherapeutics in the medical department of Marquette University.——Dr. John W. Fisher has been elected medical director; and Drs. George A. Harlow, William Thorndike and David E. W. Wenstrand, assistant medical directors of the Northwestern Mutual Life Insurance Company, Milwaukee.——Dr. H. B. B. Poppe, Wautoma, has been appointed United States pension examining surgeon, vice Dr. Charles A. Lathrop, resigned.——Dr. Wilhelm Becker has resigned as a member of the faculty of Milwaukee Medical College.——Dr. Uranus O. B. Wingate, Milwaukee, has been made medical director of the Peerless Springs Hotel and Sanitarium, Fox Lake.

Medical Staff Selected.—The Misericorde Hospital, Milwaukee, announces the following medical staff: Medicine—Drs. Walter H. Nielson, Louis F. Jermain, Nelson W Reynolds and Joseph A. Purtell; gynecology—Drs. Dennis J Hayes, Robert G. Sayle and Peter H. Jobse; obstetrics—Drs Timothy L. Harrington, Willard T. Nichols, Milo R. Hewitt, Henry McCabe, William Jobse, Carl Wagner, Thomas Fitzgibbons, Joseph P. McMahon; Charles M. Schoen, John T. Scollard, Daniel Hopkinson, Edward J. Purtell, Frank R. Wasielewski, William F. Lochemes and William H. Halsey; diseases of children—Drs Lorenzo Boorse and A W. Meyers; nose and throat—Drs. Franz Pfister, Herman Stolte and James Cavaney; skin diseases—Dr Albert H. Purdy; eye and ear—Drs Anthony J. Taugher and James A. Bach; and nervous diseases—Dr. William F Wegge.

GENERAL.

Pure Food and Drugs Congress.—We referred recently to the First International Congress for the Repression of Adulteration of Alimentary and Pharmaceutical Products to be held in Geneva next week. Further information just received shows more fully the objects of the congress, which are to determine definitions that may serve as standards for unadulterated products and to establish a sort of international alimentary codex of commercially pure products. Besides the general opening meeting, at which organizations will be effected and addresses made by the official delegates, there will be five general sessions on the following divisions· 1, wines, alcohols and other intoxicating beverages; 2, milk, butter, cheese, eggs, edible oils and fats, preserves, meats, pork butchers' meat, and salted provisions; 3, cocoa, chocolate, coffee, tea, cereals, flour, semolina, starchy products, bread, alimentary pastes, pastry, sugar, sirup, confectionery, honey, mustard and spices; 4, natural mineral waters, artificial gaseous waters, lemonade, cooling effervescent drinks, crude materials, chemicals and galenical products employed in pharmacy. The published list of members and delegates is a long one, including twenty one from the United States The number expected to attend from European countries is naturally *much larger, the list of French delegates and members far outnumbering* those of any other country.

CANADA.

Provincial Medical Association Meeting.—The ninth annual meeting of the British Columbia Medical Association was held in Vancouver, August 20 and 21. Dr. John M. Pearson, Vancouver, presiding and Dr. R. Eden Walker, New Westminster, acting as secretary. The more interesting discussions hinged around three papers. The first was that read by Dr. R V. Dolbey, Victoria, entitled "A Plea for the More Rational Conception of Appendicitis." Reference was first made to the starvation method as advocated by Ochsner, but which was considered madness by the French school; and the speaker thought every man should follow his own opinion and views in the matter. Should the doctor operate on sight was the first interesting point taken up While in America they believed in operation on sight, in Europe they inclined to the "ward off" principle. The speaker prophesied that in ten years' time surgeons will look on appendicitis from a blood-pressure standpoint Dr. Joseph Price, Philadelphia, stated he had not heard such a masterly discussion on appendicitis for over a quarter of a century. In his opinion, while Ochsner's treatment had been dangerous and fatal in many cases of children, yet the English surgeons were not aggressive enough: he believed in operation at sight. Dr. W. D. Brydone-Jack, Vancouver, read an exhaustive paper on the medical inspection of schools. Vancouver is farther ahead than any other place in British Columbia, as they have appointed a medical inspector of schools. South Vancouver also has a medical inspector. This is all that has been done in this direction in British Columbia. The speaker said that it would pay that province to have a staff of medical men paid by the education department of the province under the supervision of a medical board, giving lectures in hygiene and inspecting the school children in the different districts. Dr. Arthur L. Kendall, Vancouver, presented a paper on pure milk. In British Columbia there is no law of any kind governing the sale of milk. The conditions under which milk is marketed in Vancouver are a lasting disgrace; there is no one to whom power is delegated to prosecute; the situation calls for the gravest consideration. The amalgamation of all medical associations in the west and also of all similar bodies throughout Canada was discussed, but no action was taken. The election of officers resulted as follows: President, Dr. Charles J. Fagan, Victoria; vice-president, Dr. John H. Hogle, Nanaimo; treasurer, Dr. James D. Helmcken, Victoria (re-elected): and secretary, Dr. R. Eden Walker, New Westminster (re elected).

LONDON LETTER.

(*From Our Regular Correspondent*)

London, Aug. 22, 1908.

The Mortality of Occupations.

Dr. Tatham, superintendent of statistics, has presented to the registrar general a report on the occupational mortality in the three years 1900 02, which has just been published, and is a continuation of a somewhat similar report made ten years ago. The time which has been taken in the preparation of the report may seem considerable, but it is explained by Dr. Tatham's account of the difficulties encountered and the numerous sources of error against which he had to guard. His object has been to furnish material for continuing the study of the mortality of workers in various occupations. A valuable aid to increased accuracy has been given by the inclusion in the census of 1901 of returns showing the original occupation of persons who from age or infirmity had become unable to work and who were formerly described only as "retired." Dr. Tatham has taken the interval between the twenty-fifth and sixty-fifth year as that representing the period of industrial capacity and for this period has prepared "comparative mortality figures" In the three years referred to there were registered the deaths of 284,009 males between the ages of 25 and 65. Among the professions the clergy showed the lowest mortality; the proportion of them living beyond 65 enormously exceeded the average. Their comparative mortality figure (524) is lower than that of any other occupation except farmers. On the other hand, the medical profession shows a high comparative mortality, 952. Compared with lawyers, doctors die more rapidly at every stage of life. The mortality of publicans (saloon keepers) exceeds the standard at every age, and between 25 and 45 their mortality is more than double the average, but the figures are a distinct improvement on those of previous years. Diseases of the nervous and circulatory systems contribute the largest share to their mortality. The mortality of dangerous occupations shows a decline. Thus among woolen manufacturers, potters, stone quarriers and coal miners there has been a marked decline in the mortality due to phthisis In lead workers and potters the amount of fatal lead poisoning has been reduced more than 50 per cent.

Deaths Under Anesthetics.

Public attention has been attracted to the number of inquests held recently on patients who have died in London under chloroform and other anesthetics. The home secretary has been asked in parliament whether his attention had been called to the fact that three inquests had been held in one day on persons who had died under anesthetics. In reply Mr. Gladstone said that he was in communication with the lord president of the council, and through him with the general medical council, on the question whether a course of instruction in the administration of anesthetics can be included in all cases in the course of study required for medical qualification.

The Registration of Deaths Bill.

A bill has been introduced into parliament amending the law on the registration of deaths, and is supported by Sir Walter Foster and other medical members. Its object is to give effect to the principal recommendations of the select committee on death certification which sat in 1893. It enacts that any stillborn child born after the twenty-eighth week of pregnancy shall be deemed to have been born alive and to have died after birth. By this legal fiction the registration of deaths is brought into line with that of births under last year's act. It is also proposed that the certificate of death shall be so framed that the physician signing it must have inspected the body, thus abolishing the clause "as I am informed" of the present certificate. The certificate must also specify the signs from which the fact of death is inferred and state that the certifier has personally attended the deceased on two occasions, one of these two being within eight days of death. The latter modification decides a question—at present difficult—whether an inquest should or should not be held in certain cases of sudden death. The rule is to hold an inquest in all cases in which a person dies without having been attended by a registered medical practitioner. But it frequently happens that a doctor is called in for the first time to a patient who is taken suddenly ill and dies soon afterward. The problem then arises, is the doctor justified in stating on the certificate that he "attended" the deceased in his last illness. This question has never been dogmatically settled as the proposed law will do by making a minimum of two attendances necessary. At present the doctor can, according to his own discretion, give or refuse a certificate. However some coroners have ruled that seeing a patient only once before death does not constitute "attendance." Another provision is the appointment of public certifiers of death who must be physicians. The functions of these officials will be to verify and countersign the certificate given by a coroner after an inquest. They will thus be medical advisers to the coroners. The public certifier is also to be informed by a registrar when there is doubt about any death or its certification to inspect the dead body, and to issue a certificate of death if he thinks fit.

Oxygen Inhalations in Athletics.

Mr. Leonard Hill, F.R.S., lecturer on physiology at the London Hospital, has been conducting some remarkable experiments on the use of oxygen in athletics, which he believes will lead to the breaking of records. For the past year in coöperation with his demonstrator, Mr. Flack, he has been engaged in a research on the cause of hard breathing. He has found that a man can hold his breath for three times the normal period by taking three inhalations of oxygen. Dr. Vernon of Oxford succeeded in holding his breath for eight and one-half minutes. These experiments led Mr. Hill to think that the panting and distress of athletes might be largely mitigated by breathing oxygen deeply before and after a race, the former to prevent distress and to increase running powers, the latter to relieve whatever distress occurs. At the London Hospital athletics oxygen was given to some of the runners immediately after the races and greatly relieved their distress. A well-known athlete, Mr. Holding, ran an unpaced quarter of a mile in fifty seconds after breathing oxygen for three minutes. In the trials for the Olympic games he had been unable to do this in less than fifty-two seconds. The onlookers declared he was not more distressed than if he had run 100 yards, and Mr. Holding agreed with this. There was a notable absence of that stiffness of the muscles and grogginess in the legs which follows a great exertion in running. Another athlete, Mr. Just, after breathing oxygen for three minutes, ran half a mile in one minute and fifty-five seconds, slightly beating his record. Mr. Hill is now trying to get a world's record breaker to run for him.

Vital Statistics in Edinburgh.

The report of Sir Henry Littlejohn, health officer of Edinburgh, contains much matter of interest. Once more the falling birth rate has touched its lowest figure, 21.68 per 1,000. The death rate also is falling, but whereas the death rate has fallen since 1861 from 23.15 to 14.38—a drop of 60 per cent.—the fall in the birth rate is still greater, from 33.40 to 21.68, about 63 per cent. The falling birth rate is not due to diminution of the number of marriages, for that has slightly increased. It is evidently due to the widespread desire of married people to have a limited number of children.

Are Londoners Poisoned by Coal Gas?

This question is propounded by the *Lancet* in consequence of the report of the largest of the metropolitan gas companies that no less than 110,000,000 of cubic feet of gas had not been accounted for during six months. The loss of this large amount of gas is attributed to leakage in consequence of the increased weight and speed of vehicles since the development of motor traffic disturbing the gas mains. The chairman of the company in making the report was only concerned as to the monetary loss. But the *Lancet* points out that 10 per cent. and probably more of this gas consists of the poisonous carbon monoxid and that it is no wonder when there is no movement in the air and there is a stagnant mist or fog (a time when there is a great demand for gas) Londoners complain of headache, dizziness and oppression—symptoms of chronic carbon monoxid poisoning.

DUBLIN LETTER.

(*From Our Regular Correspondent.*)

DUBLIN, IRELAND, Aug. 20, 1908.

The University Bill.

During the past few months there have been under debate in Ireland two public matters of much interest to the medical profession, the university bill and the tuberculosis bill. The former has now passed both houses of parliament and only awaits the royal assent to become a law. Under its provisions two new universities are established in Ireland, one in Belfast and one with its center at Dublin, but with constituent colleges in Dublin, Cork and Galway. The college in Dublin is yet to be started, while the Queen's colleges in Belfast, Cork and Galway take their place in the new universities. During the sixty years of their existence the three Queen's colleges have had a varied course. For thirty years they together constituted the Queen's University. Then the university was abolished and for thirty years the colleges have been in the cold, though teaching students for the examining board designated as the "Royal University." Now this board has been abolished and the colleges are arranged in the new combination.

The Tuberculosis Bill.

The tuberculosis bill introduced by the Irish government and designed to give local sanitary authorities additional power to deal with tuberculosis has given rise to a great deal of debate in medical circles. It was drafted apparently without consultation with any competent medical advisers, and at the dictation of the local government board, the government department which has the responsibility for dealing with the public health. This board has distinguished itself even among government departments by its inactivity and incompetence, and as large added powers are proposed to be given to it under the bill, much hostility to certain provisions of the bill has been aroused. The bill itself is, indeed, a very small one, and the principal powers conveyed in it are in the direction of providing sanatoria and isolation hospitals, of inspecting dairies and destroying tuberculous cattle, and of giving instruction in the methods of avoiding tuberculous infection. One clause, however, that rendering it compulsory for the medical attendant to notify the medical officer of health of the district concerning the existence of cases of tuberculosis has called forth a regular tornado of opposition. Curiously enough, it is a reform demanded for years past by all those interested in the tuberculosis question. It is not easy to see any rational ground of opposition to it. The same principle is applied to the case of the other infectious diseases, and has not been found to press unpleasantly on any one. If the public health authorities are to attempt to deal with tuberculosis at all, it is necessary that they should have some means of learning where the disease is situated. We are likely to hear more about the question in the next month or two, as through pressure of business the bill has had to be postponed till the autumn session of parliament.

Registration of Nurses.

Within the past few days another Irish grievance has come into being, the aggrieved parties being the Irish nurses. For many years past the trained nurses of England, Ireland and Scotland have been agitating for a system of state registration. During the last session of parliament a bill drawn up by the nursing organizations was introduced into the house of lords, and has passed that house, but with the extraordinary amendment added that Ireland should be excluded from its provisions. The amendment was added at the instance of the government, and the Irish nurses, who are clamoring like their English sisters for registration, want to know the reason why. No one can tell them, though there are rumors that the religious orders, in whose hands is much of the nursing in Ireland, are opposed to the principle of registration. The net result is that the bill is likely to be wrecked, and many medical men will not be sorry, since they regard a state registered nurse as a probable rival in practice.

Death of Sir John Banks.

During the past few weeks Ireland has lost the dean of the medical profession in the person of Sir John Banks, who had reached the age of 97. He had long retired from practice, and some years ago quite lost his sight, but his intellect was clear to the last, and he retained his interest in current affairs. Sir John had been one of the leading figures in Irish medical life for many years while occupying the position of regius professor of medicine in Dublin. He had been president of the Royal College of Physicians in Ireland and president of the British Medical Association. It is related of him that on one occasion being offered a knighthood by Queen Victoria, he replied in the following laconic telegram "No, thanks John Banks."

BERLIN LETTER

(From Our Regular Correspondent.)

Berlin, Aug. 13, 1908.

University Personal News

The position of teacher of orthopedics left vacant by the death of Hoffa, against the filling of which difficulties were raised on the part of the faculty, as I have mentioned in a previous letter, has now found an occupant. Professor Joachimsthal, a pupil of the renowned Prof. Julius Wolff, who may be mentioned as one of the founders of orthopedic surgery, has been appointed as the successor of Hoffa. Professor Joachimsthal can show some noteworthy accomplishments in his special field. He has the reputation of being a good teacher and successful in practice. To be sure he does not equal the brilliant personality of Hoffa, and I believe that I am not making too severe a criticism when I assert that he has been chosen because a better man could not be procured.

The various vacancies which have occurred in the chairs of pharmacology in the Prussian universities have also been filled. Privatdocent Dr. Heubner, a son of our regular professor for children's diseases, has been called to Gottingen as the successor of Professor Jacobj, and Gurber, professor of physiologic chemistry, has been called from Wurzburg to Marburg as the successor of Professor Heffter (who, as formerly announced, succeeded the deceased Liebreich in Berlin). The change in Gurber's sphere of teaching will not seem striking to you in America, where, as in England, changes in the subjects taught are not uncommon. In Germany also it was formerly frequently the case that an anatomist obtained the chair of physiology or of surgery. In late years, however, changes of this sort have scarcely occurred. That such a change was possible in the case of Professor Gurber is to be explained by the fact that pharmacology in the Prussian universities at the present time is treated in somewhat stepmother fashion. The fundamental conditions of pharmacologic instruction have changed so materially in late years that the proper disposition of the subject is unsettled. The discovery of new remedies is a rare occurrence in our university pharmacologic institutes; this work is carried on in the laboratories of the great manufacturing chemists, in which scientific chemists are working continually with great success in the development of synthetic chemistry, pharmacology and pharmacy. The important remedies which have been discovered of late, viz., veronal, sajodin, aspirin, etc., etc., originated in the great factories, such as the Elberfeld color works, the Hochst color works, Merck's factory at Darmstadt, etc. The university pharmacologic institutes confine themselves as a rule to testing these products after their introduction. But as these institutes have no clinical material available the testing can extend only to animal experiments. The clinical trial of the new medicines naturally takes place in the clinics and hospitals, and this field of study is lacking in the pharmacologic instruction. There remains for it only the art of prescription writing, and this task does not seem a sufficient basis for a special chair of pharmacology. What I have set forth here is the opinion of many clinicians who for this reason have come to the conclusion that instruction in pharmacology should be attached to clinical medicine. That the pharmacologists on the other hand object to this is easily understood. I refer in this connection in particular to an article which Prof. Hans Horst Meyer of Vienna, a pharmacologist very prominent at the present time, published in one of the latest numbers of the *Deutsche med. Wochenschrift*. But it appears, as noted above, that with the Prussian authorities the trend of opinion is in a direction unfavorable to pharmacology. This is well illustrated by the fact that when the noted pharmacologist Professor Binz at Bonn resigned his chair a short time ago on account of age a pharmacologist was not appointed to succeed him, but the professor of internal medicine, Professor Leo, although Leo's achievements in the pharmacologic field are quite unimportant.

Moreover, Prof. George Klemperer, who is at present a privatdocent of special pathology and therapeutics at Berlin, has been selected by the government as the successor of Professor Leo. The Bonn medical faculty are not, however, satisfied with this selection and for several months negotiations have been in progress regarding this question. The government has, of course, the right to fill the place without reference to the wishes of the faculty, but in this case it may well hesitate to do so, as not long ago it transferred a professor from the Bonn faculty against their expressed wish, and the repetition of the proceeding might lead to a conflict with the professors at Bonn. Whether a harmonious conclusion will be reached remains to be seen. Certainly the Bonn faculty would gain an excellent teacher in George Klemperer.

Professor Ewald, the well-known author in the field of gastrointestinal pathology, has been appointed an ordinary honorary professor on a regular salary (*ordentlicher Honorar Professor*). This peculiar position is best characterized by the humorous definition: "An 'ordinary honorary' professor is a professor who is not an *Ordinarius* and who receives no *Honorare* (fee)." Regular (*ordentliche*) professors are those who have a seat and a vote in the faculty. The "ordinary honorary" professors do not belong to the voting body of the faculty, but have a salary and this honorary title. At any rate, it signifies a distinction which the prominent clinician has well deserved. At present we have in Berlin 11 "ordinary honorary" professors, considerably more than in former years.

Of late in Germany, and especially in Prussia, it has become the custom on the part of the government to grant titles and orders in greater numbers and more readily than formerly, and the medical profession comes in for its share as well. That the distinctions lose in value with their greater frequency is beyond question.

VIENNA LETTER.

(From Our Regular Correspondent.)

Vienna, Austria, Aug. 18, 1908.

Postgraduate Work in Vienna.

I wish to express my heartiest endorsement of your editorial in the issue of July 25 on "Medical Work in Vienna." The man who wrote it shows a very good insight into conditions as they are now here. Indeed, lately the number of men who wanted to obtain all the best of medical knowledge for no money and no time had increased to such a degree that they were really handicapping those who were intent on earnest work. I hope that the editorial will be read by all those who intend coming to Vienna.

The New Clinics in Vienna.

To-day the foundations of the three new clinics in the new General Hospital have been laid. The new buildings will not be handed over to the university before 1910. The first is to be a clinic for internal medical cases (Professor von Noorden) with 100 beds, an isolation pavilion, a diet kitchen for special diet in diseases of metabolism, and a special laboratory; the second a clinic for diseases of the nose and throat (Professor Chiari) with 18 beds, an isolation pavilion of 10 beds for diphtheria cases, all necessary annexes, an operating theater and a laboratory, and the third a clinic for diseases of children (Professor von Escherich), which will have 44 beds, an infant ward with 10 cots and a *couveuse*, or incubator ward, with 72 boxes, for premature or very delicate babies. In separate pavilions will be wards for scarlet fever (24 beds) and diphtheria (21 beds). The lecture hall, where the professors will deliver their lectures, will seat 236 students in the medical clinic, 200 in the pediatric, and 100 in the laryngologic clinic.

The expenditure for these three clinics has been estimated at 5,000,000 crowns (about $1,000,000) apart from the cost of the site. The price of the ground will be more than covered by the proceeds of the sale of the old general hospital.

The two gynecologic and obstetric clinics (Professors Schauta and von Rosthorn) are already in working order. Each contains 200 beds, with 35 reserve beds for obstetric cases, and 52 beds with 6 reserve beds for gynecologic cases. There is also a pavilion for 24 infectious cases. All the nurses, the members of the medical staff, and the students practicing their fortnight's *practicum* (the two weeks' service as junior assistant which each student must give at least twice) are lodged within the clinic. The lecture hall will accommodate 200 students. Apparatus for instruction, laboratories and kitchens are provided on a liberal scale. A third obstetric clinic for the instruction of midwives only, will soon be opened. The expenditure for these three clinics, which is met by the state, also amounts to a million dollars. The new pavilions are only 200 yards away from the old *Allgemeines Krankenhaus* or general hospital, well known to all students, and will enjoy better air and greater quiet, thanks to the closer vicinity of an extensive park and the greater distance from public traffic.

Pharmacology

[Contribution from the Laboratory of the American Medical Association.]

SODIUM PERBORATE.

W. A. Puckner and H. A. Clark.

A chemical compound known as sodium perborate has been put on the market in the last few years and its use proposed in both medicine and the arts. Its therapeutic and technical value depends on its property of forming hydrogen dioxid when brought in contact with water, and it has been proposed as a substitute for hydrogen dioxid solution (Aqua hydrogenii dioxidi, U. S. P.). The advantages claimed for it over the well-known "peroxid" are those of stability, uniformity, convenience, greater oxidizing power and decreased cost. Thus, it is stated that while "hydrogen peroxid preparations are subject to deterioration and loss in strength when once the bottle is unsealed" sodium perborate "will keep and stand transportation in its concentrated powder form and always be ready for solutions of hydrogen dioxid of any desired strength, whereas the bulky hydrogen peroxid 10 volume solution has to be diluted for use in most cases and keeps you always uncertain of its real strength." Another advantage claimed for sodium perborate is that its solutions in water are alkaline, while the availablo medicinal hydrogen peroxid solutions are always acid.[1]

Since it appeared that sodium perborate might possess some real advantages over hydrogen dioxid the Council on Pharmacy and Chemistry took up the examination of the product as found in the American market with a view to including it in the New and Non-Official Remedies. In this country sodium perborate is advertised and sold chiefly by the Roessler & Hasslacher Chemical Company, New York, and the firm claims that the preparation contains from 9 to 10 per cent. of available oxygen. Samples of sodium perborate were obtained both direct from the firm and also in the open market. When assayed by the method given below[2] they were found to contain, not from 9 to 10 per cent. of available oxygen as stated on the label, but from 6.54 to 7.66 per cent., as is shown in the account of the examination given in detail below.

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The above report was submitted to the Council on Pharmacy and Chemistry. The council having directed publication of the report, it was sent to the Roessler & Hasslacher Chemical Company prior to publication. The reply of the firm was submitted to the Council by a subcommittee, with the following report:

In accordance with the general procedure followed by the Council, the report of the chemical laboratory as adopted by the Council and ordered published was submitted to the manufacturer. In reply the manufacturer states that the firm is now conducting experiments to overcome the defects found. Your committee regrets that the manufacturer does not agree to withdraw the false claims made for the product until the product possesses the strength claimed. It is understood that the Council will gladly reinvestigate the product any time that the firm believes that their experimentations have led to a successful issue and the product as found on the market complies with the rules. In the meantime your committee recommends that the report be published so that physicians may be informed of the truth and not be misled by the claims of the manufacturer which may in the future be trustworthy but certainly are not so at present.

This report was adopted.

W. A. Puckner, Secretary.

Exposure of Fraudulent Proprietaries in Germany.

The need of an unbiased scientific examination of all medicines of a proprietary nature, instead of reliance on the manufacturer's claims for information regarding them, is becoming generally recognized. In Germany the recent exposure of the products of Dr. A. Horowitz—Arhovin,[1] Pyrenol,[2] Visvit[3] and Iodofan[4]—by Professor Thoms, F. Zernik and others has done much to show that some method of controlling such products is needed to protect physicians from fraud.

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[1] The chemical formula assigned to sodium perborate is $NaBO_3+4H_2O$. While sodium meta-borate $NaBO_2$ has the constitutional formula BO(ONa) and is derived from BO(OH) sodium perborate $NaBO_3$ has the [illegible] "O(OONa) and is derived from BO(OOH). [illegible] is treated with water hydrolysis occurs, [illegible] $3O_2 + H_2O_2$; the sodium meta-borate so formed gradually absorbs water to form borax and sodium hydroxid, thus: $4NaBO_2 + H_2O = Na_2B_4O_7 + 2NaOH$. From this, it appears that sodium perborate when dissolved in water reacts to a certain extent to form hydrogen dioxid, borax and sodium hydroxid; if acid is added to neutralize the sodium hydroxid then the reaction goes on to completion, and all the sodium perborate is decomposed into hydrogen dioxid. Assuming that every molecule of sodium perborate $NaBO_3$. $4H_2O$ yields one molecule of hydrogen dioxid, which, in turn, contains one atom of available oxygen, then every 152.94 gm. sodium perborate should yield 15.88 gm. of available oxygen.

[2] Specimen 1.—Three one-quarter pound packages (designated A, B and C) received at the chemical laboratory of the American Medical Association direct from the manufacturer, in July, 1907 Package A was assayed at that time and found to contain 6.79 per cent. available oxygen. Package B was left in its original condition, and package C was transferred to a glass stoppered bottle. On June 3, 1908, packages A and B each assayed 7.14 per cent. available oxygen, while package C (the one kept in the glass stoppered bottle) assayed 5.29 per cent. available oxygen.

Specimen 2.—Three one-quarter pound packages (designated A, B and C), received at the chemical laboratory of the American Medical Association direct from the manufacturer Aug. 23, 1907. Packages A and C were not opened when received. Package B was opened and examined at once. The contents were found to weigh 140 gm. It assayed 7.66 per cent. available oxygen. On June 6, 1908, the contents of this package weighed 115.5 gm. and assayed 7.32 per cent. available oxygen. Package A was opened and found to assay 7.2 per cent. available oxygen. Package C is still retained in its original condition.

Specimen 3.—A one-quarter pound package purchased in the open market in Chicago, Aug. 24, 1907. The contents of the package weighed 130 gm. on date of purchase and assayed 6.59 per cent. available oxygen. On June 3, 1908, the contents of this package weighed 106 gm. and assayed 7.34 per cent. available oxygen.

Specimen 4.—A one-quarter pound package purchased from the Chicago branch of the Roessler & Hasslacher Chemical Co., May 13, 1908. On the date of purchase this specimen assayed 6.54 per cent. available oxygen.

Specimen 5.—A one-quarter pound package purchased in the open market in Chicago on April 21, 1908. On date of purchase this specimen assayed 6.74 per cent. available oxygen. On June 3, 1908, this specimen assayed 6.26 per cent. available oxygen.

The above examination reveals two important facts regarding this substance. In the first place it is not of the strength indicated on the label; in the second place the product seems to be decidedly unstable and unreliable. Specimen 1, in the eleven months intervening between the two assays, increased in strength. The weight of this sample was not ascertained at the time of purchase. Specimen 2 lost by keeping, approximately 17.5 per cent. in weight. If this loss is due to the loss of moisture or water of hydration only, a corresponding increase in available oxygen should be noted. In other words the specimen should have assayed at this time something over 9. per cent. available oxygen. Instead approximately 4 per cent. of the amount of available oxygen originally present had disappeared, showing that the actual loss of available oxygen was about 26 per cent. of that originally present. Specimen 3 lost approximately 18 per cent. in weight. Again, if this loss was due to water only, the specimen should have assayed approximately 8 per cent. available oxygen. This indicates an actual loss in available oxygen of approximately 10 per cent. of that originally present.

Method Employed.—The following method was used to determine the available oxygen content in sodium perborate: A weighed quantity of the salt was placed in a dry flask and about 200 c.c. of water added. To this was added 10 c.c. dilute sulphuric acid and titration with potassium permanganate solution at once begun. A few of the earlier estimations were checked by the method proposed in Merck's *Prufungsvorschriften für die pharmazeutischen Spezial-Präparate*, as follows: To a weighed quantity of sodium perborate about 1 gm. was placed in 100 c.c. volumetric flask and treated with 50 c.c. water. To this 10 c.c. of dilute sulphuric acid were added and solution hastened by moderate agitation. Potassium iodid, 5 gm., dissolved in 25 c.c. of water were added and the mixture allowed to stand with frequent agitation during one-half hour. Sufficient water to make the liquid measure 100 c.c. was then added and portions of 10 c.c. titrated with tenth-normal sodium thiosulphate solution.

The results above given were transmitted to the manufacturers. In their reply the manufacturers did not claim that the product sold by them contained from 9 to 10 per cent. available oxygen, but nevertheless appeared to consider it their privilege to sell it under this claim. While not claiming that the product really contained 9 to 10 per cent. available oxygen, they did express surprise at the low results obtained in this laboratory and, as was but natural, suggested that probably the method of assay used by us was faulty and did not do their product justice. Thus, they suggested, that there is danger that some oxygen may be liberated from the solution before the titration is made. They suggested that the liquid should *not* be heated in order to produce a quicker solution and that the sulphuric acid should only be added after all the perborate has dissolved. To determine whether complete solution of perborate before titration is essential, the following experiments were made:

1. Sodium perborate was treated with water having a temperature of 9 C. (48.2 F.); the dilute sulphuric acid was added before complete solution and titration with permanganate begun at once. Result, 7.89 per cent. available oxygen.

2. The conditions of the experiment were as in (a), except that the water had a temperature of 35 C. (95 F.). Result, 7.76 per cent. available oxygen.

3. The water had, and was kept at, a temperature of 9 C. (48.2 F.); the acid was added only after complete solution had occurred (this required 30 minutes), and the titration then begun. Result, 7.58 per cent. available oxygen.

4. The water had a temperature of 35 C. (95 F.). The acid was added after complete solution had occurred (4 minutes), and titration then begun. Result, 7.59 per cent. available oxygen.

These experiments show that the method of titrating sodium perborate as used in our experiments did not entail loss of oxygen prior to the titration.

At the annual meeting of the Association of German Chemists (Verein deutscher Chemiker) recently held in Jena, Germany, the necessity for an official board or institute to analyze and pass judgment on proprietary medicines was again emphasized.

A paper was read in which it was held that only an official bureau would be in a position to impart information in regard to the character of such preparations, whether misleading statements were being made about it and whether the product is dangerous to the public health or deficient in therapeutic properties. The warnings issued by the Berlin police, the Carlsruhe Board of Health and the Pharmaceutic Institute of the University of Berlin have generally blown past like an idle wind, leaving no permanent effect except that those who exposed the fraud were usually put to much inconvenience and annoyance. The author of the paper stated that he was threatened with a damage suit when ten years ago he called attention to the chemically incorrectly designated mixture sailing under a scientific flag, Glycosolvol, one of the first representatives of the now ubiquitous fake synthetics.

Lately, he continued, the director of the Pharmaceutic Institute of Berlin University—Professor Thoms—had to appear in court on account of his exposure of Pyrenol. He commented on the audacity of the manufacturers of fraudulent products who try to frighten their adversaries by arrogant impudence; he instances the fact that the manufacturer of Pyrenol twisted into advertisements of his remedy the exposures of it made by Thoms, Zernik and Gadamer. While physicians are the ones who are directly humbugged in Germany, the *medical profession seems to be the least concerned* about the matter if we are to judge by our German exchanges.

Correspondence

Contract Practice.

Johnstown, N. Y., Aug. 3, 1908.

To the Editor:—In the Department of Medical Economics in The Journal, Aug. 1, 1908, page 425, you state substantially that there is ethically or legally no reason why a physician should not make a contract with lodges provided he be paid proper prices for his services.

I believe that there is a view of "lodge doctoring" you entirely overlook, and to my mind it is the most important.

As soon as a physician assumes the position of "lodge physician" immediately every member of that lodge becomes an active canvasser for new recruits not alone for their lodge but to his clientele. They invade the fields of every physician and prevail on their patients to become members of their beneficial society (really Dr. So-and-So's free medical clinic), as the greatest benefit to be derived is the valuable boon of free (?) medical services.

In my opinion price has nothing to do with it; it is the unfair competition that is and should be the most objectionable feature. I believe it is incorrect ethically for any physician to occupy the position of "club physician," regardless of price.

Perhaps it may be all right if every doctor should institute his "free medical clinic, price $1.50 a year in advance," but is it a desirable state for the profession to attain?

Austin Hogan.

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[1] The Journal A. M. A., May 9, 1908, p. 1541.
[2] The Journal A. M. A., June 13, 1908, p. 1995.
[3] The Journal A. M. A., May 2, 1908, p. 1440.
[4] The Journal A. M. A., March 7, 1908, p. 784, and April 4, 1908, p. 1135.

Miscellany

ASSOCIATION OF NATIONAL FOOD AND DAIRY DEPARTMENTS.

The twelfth annual convention of the Association of State and National Food and Dairy Departments, held at Mackinac Island, Mich., August 4-6, was one of the most important conferences in the history of the movement for pure foods.

In his opening address as president, Hon. E. F. Ladd, of the North Dakota Agricultural College, reviewed the history of the movement and discussed the relation of national legislation to that of the various states. He reviewed in detail the work of the Department of Agriculture and severely criticised the attitude of Secretary of Agriculture Wilson. After quoting President Roosevelt that the action of the various state food and dairy commissioners showed how much good for the whole people resulted from the cooperation of the federal and state officials, President Ladd said that much could be accomplished with a national law left for its enforcement to an unhampered, liberal minded and fearless man like Dr. Harvey W. Wiley. "Then food adulterators and special interests would respect and obey the laws; but when there stand between him and the interests' a specially constituted board of doubtful constitutionality, how can we hope for cooperation such as the President calls for? We should not, however, forget the good work that the secretary has done for the cause of agriculture, but should direct our criticisms to the workings under the food law where, no doubt, enormous political pressure has been brought to bear. It has been recognized that the common ground on which state and national laws can best meet is through the establishment of proper standards which would serve as a guide for both state and national authorities, prove an aid to the courts and enable honest manufacturers to meet the demands of the several food laws. But the establishment of standards is what the food adulterators and special interests fight against, for, with established standards once in force, the food adulterator's days are numbered, the honest producer comes to his own and the people receive what they order and pay for."

He then reviewed the efforts made to secure such standards and stated that the Secretary of Agriculture did not favor their establishment. He concluded his address by saying that as a result of a year's experience it must be concluded that there could be no official cooperation between state and national authorities in the preparation of standards as a common basis for action, and that special attention should be given to strengthening state laws and enlarging the standard committee and continuing the preparation of standards already begun, which standards should be made a part of the statutes in every state.

Professor Ladd specifically recommended the appointment of a committee to draft a uniform law for adoption by the various states and also made a number of technical recommendations regarding preservatives, bleached flour, etc. As a result of this address the convention adopted resolutions setting forth its views as follows:

> *Resolved*, That the Association of State and National Food and Dairy Departments again reaffirms its allegiance to the principle of uniformity of food laws. This association has worked faithfully and consistently towards securing such uniformity, both of requirements and interpretation, as will secure to the consuming public of every State alike ample and sufficient protection from fraud in and adulteration of food products. In support of this policy this association welcomed the cooperation of the National Government, as manifested through the Department of Agriculture in making provision for the work of the joint standards committee. We believed then, and we believe now, that only through the determinations of such a committee can satisfactory foundation be laid for a uniform law.
>
> This association regrets that such cooperation has been withdrawn by the Secretary of Agriculture, and it is with extreme reluctance that, after more than a year's delay, a year spent in fruitless effort to again enlist the support and cooperation which the Department of Agriculture previously volunteered, we are at this time forced to the conclusion that the work of the joint standards committee, if continued, must be provided for and sustained without assistance from the National Government. The following facts have led to this conclusion:
>
> First. The Secretary of Agriculture was authorized by Congress to provide for the joint standards committee.
>
> Second. Under this authorization the support of the National Government was at first freely tendered and results eminently satisfactory were secured.
>
> Third. The Secretary of Agriculture, through his accredited representative, Dr. Galloway, stated before the Senate Committee

on Agriculture that direct authorization of further expenditures for continuing the work of the joint standards committee was entirely unnecessary because of the fact that under the National Food and Drugs Act the Secretary of Agriculture has ample authority for making expenditures to continue this work. Authority for this statement is to be found in the printed records of the proceedings of the Senate Committee on Agriculture. Accepting such statement in good faith, the friends of a vigorous administration of the food law withdrew their demands for said direct appropriation.

Fourth: From that time to the present the Secretary of Agriculture has not again called the joint standards committee together.

Fifth: Because of the failure of the Secretary of Agriculture to again call together the joint standards committee, this association, at its annual convention of 1907, by formal resolution, requested the Secretary of Agriculture to again aid and assist in the further continuance of the work of said joint standards committee.

Sixth: This resolution was promptly transmitted to the Secretary of Agriculture by the secretary of this association, but no reply has ever been received thereto.

Seventh: The Secretary of Agriculture was appealed to in person by four members of the executive committee of this association in November, 1907, and at the close of said conference stated as his definite and final conclusion that he had no power to use any of the funds appropriated by Congress for the administration of food and drug work in paying the expenses of the joint standards committee.

Eighth: When confronted by the written record of the report of the proceedings of the Senate Committee on Agriculture, in which his statement, through Dr. Galloway, is recorded, the Secretary of Agriculture did not deny his responsibility therefor.

Ninth: As a last resort the executive committee of this association, as represented at that conference, tendered the services of the joint standards committee free from expense to the Secretary of Agriculture. The reply of the Secretary of Agriculture was directly to the effect that it would not be legal for the National Government to accept services for which it did not pay.

Tenth: Several months later the Secretary of Agriculture, when requested to call together representatives of the food departments of the several states in order that a proper appeal might be made to Congress for a direct appropriation to continue the work of the joint standards committee, refused to take such action.

However, regardless of these unfortunate conditions, this association believes that the work of the joint standards committee must be continued, and hereby authorizes its continuance, and pledges its good faith that ways and means will be provided for the maintenance of said committee.

This association further pledges its every effort to formulate, within the coming year, a food bill founded upon the determinations of the joint standards committee, which food bill shall be formulated with a view towards uniform requirements throughout the several States.

This association also pledges its best services toward securing effective cooperation between the food departments of the several states in their efforts towards the securing of such uniformity

Resolved, That this association hereby authorizes and directs the present president of the association to appoint a committee of seven, of which he shall be the chairman, to prepare a model state food bill, the determinations of the joint standards committee to be used as a basis of facts in the preparation of said bill.

Resolved, That this association is unalterably opposed to the bleaching of flour by the oxides of nitrogen or other chemicals

Resolved, That this association is convinced that all chemical preservatives are harmful in foods and that all kinds of food products are and may be prepared and distributed without them, and pledges its best efforts to use all moral and legal means at its disposal to exclude chemical preservatives from food products, and to this end, we ask the cordial support of all national, state and municipal authorities charged with the enforcement of food and drug laws. And in this connection we desire to express our gratitude for the helpful services of the medical profession generally, and especially to the American Medical Association.

COMMENTS.

The appointment of a committee to draft a uniform law for the various states is of the utmost interest and importance to all physicians. It is hoped that arrangements may be made for cooperation between this committee and the Committee on Medical Legislation of the American Medical Association whereby such a bill may be endorsed by the Committee on Medical Legislation and its adoption advocated by physicians throughout the country. Laws adopted by the federal government can affect only articles of interstate commerce. The real regulation of foodstuffs must eventually rest with the various states. *Uniform and effective state legislation* is, therefore, of the greatest importance.

The association adopted a standard for distilled spirits, which was prepared after careful scientific investigation by the joint food standard commission appointed by the association and by the Association of Agricultural Chemists. This standard is in accord with the order issued by President Roosevelt based on the opinion of Attorney-General Bonaparte as to what constitutes straight and blended whiskies.

OFFICERS ELECTED.

Prof. J. Q. Emery of Wisconsin was elected president, and Mr. R. M. Allen of Lexington, Ky., was re-elected secretary. Mr. Allen came into well-deserved prominence last winter as one of the promoters of the Kentucky Pure Food Law, which was abstracted in THE JOURNAL, March 21, 1908, page 985. He has recently resigned his position on the pure food commission of Kentucky and is now an assistant attorney-general of the United States under Mr. Bonaparte, in special charge of the prosecutions of violations of the pure food law.

Headache and Eyestrain.—L. H. Mettler, Chicago, in the *Medical Herald*, August, discusses the relationship of the psychoneuroses, especially headache, to eyestrain. He asserts that eyestrain never produces headache in the absence of a congenital or acquired abnormality of the nervous system, and that when there is an abnormal condition of the nervous system present—an abnormality which in itself may account for the headache—the ocular, like other anomalies, may and sometimes does provoke such a nervous apparatus into a distressing degree of indefinite activity along sensory, motor and other functional lines. In upholding these two propositions Mettler appeals to logic, physiology and clinical observation. He says that much of the argument in favor of the headache and the other neuroses being caused by an excess of a physiologic function in an otherwise normal organism is of little real scientific value. In most cases the same sort of reasoning would enable one to fix on other equally probable causes for the cephalalgia. In his appeal to physiology, which clinical medicine seems so often and so strangely to ignore, he quoted many fundamental maxims to show how the great law of habituation and accommodations nullifies the assumed deleterious effects of mere excess of function in an otherwise normal nervous system. In his argument from the clinical side he pointed out the curious and suspicious fact that it is only in the functional and little pathologically known psychoneuroses that these eyestrains play so important a rôle. One would imagine that now and then so persistent and supposedly effective a course ought to produce an organic trouble; but it never does. In no known organic nervous trouble is eyestrain invoked as a cause. He furthermore showed that it is incomprehensible how in an otherwise normal organism visual anomalies and muscular imbalance can originate such well-established and distinct clinical entities as migraine, epilepsy, chorea or hysteria. A uniform cause is always followed by a uniform result. This is a fundamental axiom of science. He asserted that it is in cloud land of ancient pathology and symptomatic medicine, both of which ignore the plain teachings of modern physiology and physiopathology, that the belief that eyestrain is and can be "the sole and sufficient cause of headache" and other psychoneuroses, flourishes.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS *will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.*

VALUE AND TECHNIC OF MERCURIAL INJECTIONS.

To the Editor:—I would like an opinion as to the value of mercurial injection; where to inject, and how often, how to prepare the injection, and what form to use. H. F.

ANSWER.—Mercurial injections are of undoubted value, since they possess all the advantages of hypodermic treatment as well as giving more prompt results than are secured by medication by the mouth. The technic is the same as in any deep intramuscular injection. A needle, preferably of platinum, of one and one-half inches in length, should be used. The injections are usually made into the deep substance of the gluteal muscles, the needle being introduced at right angles to the surface and forced directly into the muscular tissue. The usual dose is from 5 to 30 minims—depending on what solution is used—at an injection. Of the many mercurial preparations which have been used for this purpose, mercury salicylate and mercury sozoiodolate (the salt of diodo-paraphenolsulphonic acid) have received much favorable comment. The solution of the sozoiodolate may be prepared by triturating one gram mercury sozoiodolate, Merck, with water, 50 c.c. and adding to this a solution of sodium iodid, 3 grams, in water, 50 c.c. *The solution should be filtered. For prescription* of mercury salicylate, see THE JOURNAL, July 27, 1907, p. 339. Injections can be given on alternate days or every day for a period of from two to four weeks, depending on the condition of the patient and the necessity of obtaining immediate results. After giving the injections for from two to four weeks, it is well to suspend treatment for about the same length of time, later resuming it if necessary. During the hypodermatic treatment, iodids can be given by the mouth in the usual way, if desired.

The following articles that have appeared in The Journal may be referred to:

Gottheil, W. S.: Ten Years Experience in the Treatment of Syphilis by the Intramuscular Injection of Insoluble Mercurials, Aug. 3, 1907, p. 365.

Lydston, G. F.: Intravenous Treatment of Syphilis, Nov. 16, 1907, p. 1662.

Therapeutics: Injection Treatment of Syphilis, July 27, 1907, p. 339.

Wernigk, R.: Twelve Years Experience in Treatment of Syphilis by Intravenous Injections of Mercury, Arsenic and Iodid of Sodium, Feb. 1908, p. 609.

KEPHIR AND KOUMYS

Pittsburg, Pa., Aug. 20, 1908

To the Editor:—How is kephir prepared? What is meant by "mother kephir" and how is it obtained? H. C. Feldstein.

Answer.—According to most authors the product of the natural fermentation of mare's milk is called koumys. This fermentation is produced by a peculiar fungus which occurs in masses, called by the Tartars kephir seed or the millet of the Prophet. The imitation product, prepared from cow's milk, is known as kephir. Kephir is prepared by adding the fungus to the milk and keeping it at a temperature below 50 degrees F. During the process of fermentation the bottle should be shaken at least once a day, in order that the part which coagulates may not be unevenly distributed throughout the mass. Kephir is usually distinguished as two-day and three-day kephir. The former contains more milk sugar and less lactic acid than the latter. "Mother kephir" is a term applied to the fungus The dry fungus is on the market as a non-proprietary article which can be obtained through wholesale druggists. Much of the koumys that is made in this country is produced by adding sugar to milk and fermenting with yeast.

BISMUTH PASTE TREATMENT OF TUBERCULAR SINUSES.

Green Isle, Minn. Aug 25, 1908.

To the Editor.—In what numbers of The Journal can I find literature on the bismuth paste treatment of tubercular sinuses? Any other additional references will be welcome

J. P. Schneider.

Answer.—This treatment was described by Dr. E G. Beck, Chicago, in The Journal, March 14, 1908, page 869, and in the *Illinois Medical Journal*, April and July, 1908. There was also a discussion of the matter in a society report in The Journal, July 25, 1908, page 342.

THE FOLIN METHOD OF ESTIMATING THE QUANTITY OF AMMONIA IN THE URINE.

In The Journal, Aug. 22, 1908, page 692, was a correction of the article by Dr. W. H. Buhlig in a previous issue of The Journal. An error unfortunately occurred in this correction. This error was detected, however, after a few copies had been run off, so that about 95 per cent. of the edition was correct. The first legend should be as follows:

Fig. 1.—Apparatus used in the Folin method of determining the ammonia content of urine, with the addition of an air-filled flask, C: A, dilute H_2SO_4: B, 50 c.c. urine, 20 gm. NaCl, 20 c.c. petroleum, 2 gm. Na_2CO_3, added last; C, air flask; D, 30 c.c. n/5 H_2SO_4 + distilled H_2O.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, for the week ending Aug. 29, 1908:

Bloombergh, H. D., capt., M. C., granted twenty days' leave to take effect about Oct. 5, 1908.

Field, Peter C., capt., M. C., ordered to proceed to Fort Benjamin Harrison, Ind., for duty during the maneuvers.

Griffs, Frank C., first lieut., M. R. C., ordered for duty at camp of instruction, Fort Benjamin Harrison, Ind., revoked.

Henning, O. F., first lieut., M. R. C., ordered to accompany the command at Fort Sheridan, Ill., to camp of instruction, Fort Benjamin Harrison, Ind.

Halliday, Francis A., first lieut., M. R. C., ordered to report in person to Colonel Valery Havard, Medical Corps, president of the board of officers appointed to meet at the Army Medical Museum Building, Washington, D. C., for examination, to determine his fitness for appointment as first lieutenant in the Medical Corps of the Army.

Hasseltine, H. E., first lieut., M. R. C., granted two months' leave of absence.

Whiteley, Joseph H., contract surgeon, granted eighteen days' leave of absence.

Kirkpatrick, Thomas J., major, M. C., leave of absence extended fourteen days.

Blanchard, R. M., capt., M. C., leave of absence extended one month.

Snoddy, Cary A., capt., M. C., honorably discharged from the service of the United States.

Brown, O. G., capt., M. C., granted ten days' leave of absence.

Weed, Frank W., capt., M. C., granted leave of absence for thirty days.

Dowd, Pascal M., contract surgeon, ordered to proceed from Fort Ontario, N. Y., to his home, Oswego, N. Y., and report to the Surgeon-General of the Army for annulment of contract.

McCown, Thomas B., first lieut., M. R. C., assigned to active duty at his present station.

Shortlidge, E. D., capt., M. C., resignation of his commission as a medical officer of the army has been accepted by the President, to take effect Sept. 15, 1908.

Baker, Charles L., first lieut., M. R. C., recently appointed from contract surgeon, with rank from July 7, 1908, is ordered to active duty in the service of the United States, and assigned to duty at his present station.

Tyler, George Trotter, first lieut., M. R. C., ordered to proceed from Fort Monroe, Va., to Fort Fremont, S. C., for temporary duty.

Bloombergh, H. D., capt., M. C., granted twenty days' leave of absence.

Navy Changes.

Changes in the Medical Corps of the U. S. Navy, for the week ending Aug. 29, 1908:

Hoen, W. S., P. A. surgeon, ordered to duty with flotilla of lighthouse vessels en route to Pacific coast.

McClurg, W. A., medical director, detached from duty as a member of the naval examining and naval medical examining boards, Washington, D. C., Sept. 1, and ordered home.

Brown, E. M., P. A. surgeon, unexpired portion of sick leave revoked; ordered to the naval recruiting station, Los Angeles, Cal.

Duhigg, J. T., asst surgeon, detached from the naval recruiting station, Los Angeles, Cal., and ordered to duty with the Pacific Torpedo Fleet

Hathaway, G. S., asst surgeon, detached from the naval hospital, Boston, Mass., and ordered to Washington, D. C., Sept. 1, for examination for promotion, and then to wait orders.

Biello, J. A., asst-surgeon, detached from duty with the Pacific Torpedo Fleet, and ordered to the naval hospital, Mare Island, Cal.

Steele, J. M., medical inspector, detached from the navy yard, Portsmouth, N. H., September 18, and ordered home.

Murphy, J. A., surgeon, detached from the *Dolphin* and ordered home to wait orders.

McLean, N. T., P. A. surgeon, unexpired portion of leave revoked; detached from the naval station in New Orleans, La., and ordered to the *Dolphin*

Bunker, C. W. O., asst.-surgeon, detached from the *Arkansas* and ordered to the *Montgomery*.

Sellers, F. E., asst-surgeon, detached from the *Nevada* and ordered to the *Texas* when commissioned.

Brooke, F. H., asst.-surgeon, detached from the *Montgomery* and ordered to the naval hospital, Boston, Mass.

Lane, H. H., asst.-surgeon, detached from duty in the department of government and sanitation, Isthmian Canal Zone, Panama, and ordered to course of instruction at the naval medical school, Washington, D. C., October 1.

Turner, H. W. B., asst-surgeon, ordered to the naval medical school hospital, Washington, D. C., for duty.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Aug. 28, 1908:

SMALLPOX—UNITED STATES.

California: San Bernadino, Dec. 11-July 11, 54 cases; 11 cases previously reported; San Francisco, Aug. 9-15, 6 cases.

Indiana: Indianapolis, Aug. 10-16, 3 cases; South Bend, Aug. 9-15, 1 case.

Kansas: Topeka, Aug. 2-15, 2 cases.

Missouri: St. Joseph, July 25-Aug. 1, 4 cases.

North Carolina: Charlotte, Aug. 9-15, 1 case.

Wisconsin: LaCrosse, Aug. 9-15, 7 cases.

SMALLPOX—FOREIGN.

Arabia: Aden, July 21-27, 7 deaths.

British South Africa: East London, July 12-18, 5 cases.

Great Britain: Liverpool, Aug. 2-8, 2 cases.

Ceylon: Colombo, July 5-11, 7 cases, 2 deaths.

China: Hongkong, July 5-11, 2 cases, 2 deaths.

Egypt: Cairo, July 22-29, 3 cases, 1 death; Suez, June 25-Aug. 1, 1 case.

France: Marseilles, July 1-31, 1 death; Paris, July 25-Aug. 1, 1 case.

India: Bombay, July 15-21, 18 deaths; Calcutta, July 5-11, 7 deaths.

Italy: General, July 26-Aug. 2, 118 cases; Naples, July 19-Aug. 1, 20 cases.

Japan: Osaka, July 19-25, 1 case.

Java: Batavia, July 5-11, 3 cases.

Netherlands, The: Amsterdam, Aug. 1, 1 case.

Philippine Islands: Manila, June 31-Aug. 4, 17 cases, 10 deaths.

Portugal: Lisbon, July 26-Aug. 8, 6 cases.

Russia: Moscow, July 19-25, 13 cases, 1 death; Riga, July 25-Aug. 1, 1 case; St. Petersburg, July 19-25, 32 cases, 3 deaths; Warsaw, June 6-27, 14 deaths.

Siberia: Vladivostock, June 15-21, 3 cases.

Spain: Malaga, March 1-April 30, 4 deaths; Valencia, Aug. 2-8, 7 cases, 1 [illegible]

Straits [illegible]

Turkey [illegible] July 5-11, 1 death.

[illegible] 32 cases, 5 deaths.

Turkey in Europe: [illegible] July 26-Aug. 2, 6 deaths.

CHOLERA.

Ceylon: Colombo, July 5-11, 3 cases, 3 deaths.

China: Hongkong, July 5-11, 2 cases, 2 deaths.

India: Bombay, July 15-21, 2 deaths; Calcutta, July 5-11, 28 deaths; Madras, July 11-17, 9 deaths; Rangoon, July 5-11, 7 deaths.

Indo-China: Cholen, July 5-11, 7 cases, 7 deaths; Saigon, 3 cases, 1 death.

Persia: Teheran, June 27-July 3, 1 case, 1 death.

Philippine Islands: Provinces north of Manila, June 28-July 4, 614 cases, 331 deaths.

YELLOW FEVER.

Brazil: Manaos, July 12-Aug. 1, 5 deaths; Para, Aug. 2-8, 2 cases, 1 death.

Cuba: Daiquiri, July 31, 1 case.

Mexico: Merida, Aug. 23, 1 case; Vera Cruz, Aug. 21, 1 case.

PLAGUE.

Chili: Antofagasta, July 14-20, 3 cases; Arica, July 16-22, 1 case; Iquique, July 14-21, 3 cases, 2 deaths.

China: Foochoo, July 12-18, present; Hongkong, July 5-11, 36 cases, 28 deaths.

Indo-China: Cholen, July 5-11, 17 cases, 17 deaths; Saigon, 2 cases, 2 deaths.

Japan: Kobe, July 19-25, 2 cases, 3 deaths.

Peru: General, July 14-20, 17 cases, 15 deaths.

Trinidad: July 23-28, 1 case, 1 death.

Turkey in Asia: Bagdad, July 26-Aug. 2, 3 cases, 2 deaths.

Marriages

Reid Nebinger, M.D., to Miss Ava Grier Gearhart, both of Danville, Pa., recently.

R. H. Payne, M.D., Richland, Iowa, to Miss Ella Bohan of Seaton, Ill., August 11.

Alfred C. Wiebusch, M.D., Cora, Ill., to Miss Anna Fiene of Steeleville, Ill., August 20.

Frederick W. Wichman, M.D., Seattle, Wash., to Miss Alma M. Bergman of Chicago, July 2.

William P. Sawyer, M.D., Nevada City, Cal., to Miss M. Helen Ransom of Sebastopol, Cal., August 12.

E. S. Evans, M.D., Brooklyn, Iowa, to Miss Mara Baldwin of Whitewater, Wis., at Bisbee, Ariz., July 28.

Thomas Robert Francis, M.D., Connellsville, Pa., to Miss Jeannette Martha Daily of Buckhannon, W. Va., August 10.

Ernest Grey Bingham, M.D., captain Medical Corps, U. S. Army, to Miss Laura Churchill Thompson, at Buffalo, N. Y., August 18.

Carlton Edgar Uber, M.D., Parsley, Md., to Miss Nellie Stewart Parker of Pastoria, Va., at Ellicott City, Md., August 3.

William R. Moulden, M.D., Friendship Heights, Md., to Miss Naomi B. Stewart, at "Woodside," near Boyd's, Md., August 19.

Deaths

Henry Archibald Tobey, M.D. Miami Medical College, Cincinnati, 1875; of Toledo; formerly a member of the American Medical Association; assistant physician at the Columbus State Hospital from 1877 to 1880; superintendent of the Dayton State Hospital from 1880 to 1884; and in 1886 made superintendent of the Toledo State Hospital for the Insane; said to have been the originator of the cottage plan for segregation of patients in state hospitals for the insane; an alienist of repute; died suddenly at his summer camp at Huntsville, Ont., August 18, *from heart disease*, aged 56.

William Mavel Nickerson, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1867; a member of the Colorado State Medical Society and Association of Military Surgeons of the United States; assistant surgeon U. S. Navy, retired; who entered the Navy in 1867 and was retired in 1874 for incapacity resulting from incident of service; and has made his home in Denver for 18 years; formerly a member of the state board of pardons; died in Fort Collins, Colo., August 19, from acute gastritis, aged 62.

James P. Scoles, M.D. College of Physicians and Surgeons of St. Joseph, Mo., 1880; a member of the Kansas Medical Society; formerly president of the Southeast Kansas Medical Society; and since its organization, 10 years ago, president of the Cherokee County Medical Society; a member of the American Association of Railway Surgeons; and local surgeon for the Frisco System; died at his home in Galena, Kan., August 16, after an illness of more than a year.

Edward LeRoy Smith, M.D. Bellevue Hospital Medical College, New York City, 1889; a member of the Medical Society of the State of New York; formerly president of the Binghamton Academy of Medicine; surgeon to the Binghamton fire department; coroner of Boone County; consulting surgeon to the King's Daughters' and Lestershire hospitals; died at his *home in Binghamton, August 19, after an illness of a year*, following an automobile accident, aged 44.

Rufus Baldwin Whitehead, M.D. College of Physicians and Surgeons in the City of New York, 1893; a member of the American Medical Association; of Elizabeth, N. J.; attending surgeon and obstetrician to the Elizabeth General Hospital; is said to have died from the effects of a self-inflicted gunshot wound of the head at Portland, Maine, August 20, while temporarily insane from overwork, aged 36.

Charles E. Parish, M.D. Albany (N. Y.) Medical College, 1880; *a member of the Medical Society of the State of New* York; coroner of Otsego County for two terms; for 10 years a member of the board of town supervisors, and for several terms chairman of the board; died at his home in Maryland, August 15, from nephritis, after an illness of five months, aged 53.

Walter Julien Sleeper, M.D. Dartmouth Medical School, Hanover, N. H., 1882; a member of the American Medical Association; medical examiner for the tenth (Middlesex) district of Massachusetts; a specialist on diseases of the chest; died at his home in Westford, Mass., August 12, from pernicious anemia, after an illness of eight years, aged 48.

Harvey D. Danford, M.D. Medical College of Ohio, Medical Department, University of Cincinnati, 1870; a member of the Ohio State Medical Association; a veteran of the Civil War; and for several years United States pension examining surgeon for Athen County, Ohio; died at his home in Trimble, August 21, *after an illness of several months, aged* 63.

Edward G. Thomasson, M.D. Medical College of Ohio, Medical Department University of Cincinnati, 1880; a member of the Kentucky State Medical Association, and one of the best-known practitioners of Newport, Ky.; died in Christ Hospital, Cincinnati, August 23, following an operation for disease of the kidney, after a short illness, aged 43.

Benjamin Douty Ashton, M.D. Cleveland Medical College, 1854; a member of the state legislature in 1887; surgeon in the volunteer service during the Civil War; and president of *the village of Traverse City in* 1886; *died at his home in* Traverse City, Mich., August 6, from cerebral hemorrhage, after an illness of five days, aged 79.

James D. Russell, M.D. Kentucky School of Medicine, Louisville, 1870; a member of the Kentucky State Medical Association, and one of the most prominent practitioners of western Kentucky; for several years president of the Daviess County Medical Society; died at his home in Yelvington, August 2, from a congestive chill, aged 62.

Edwards Clemmons McEachern, M.D. Medical Department, *University of North Carolina, Chapel Hill*, 1899; *University of* Maryland School of Medicine, Baltimore, 1901; a member of the Medical Society of the State of North Carolina; died in Asheville, N. C., August 17, from tuberculosis, after a long illness, aged 28.

Albert E. Douglas, M.D. New York University Medical College, New York City, 1890; speaker of the provincial legislature of Prince Edward Island; and a member of the provincial parliament since 1900; died at his home in Hunter River, P. E. I., May 6, from pleuropneumonia, after an illness of ten days, aged 47.

Henry Blane, M.D. Vanderbilt University, Medical Department, Nashville, 1886; a member of the Kentucky State Medical Association; assistant surgeon in the Confederate service *during the Civil War*; died at his home in Cadiz, Ky., August 19, after an illness of several months, from senile debility, aged 72.

Solomon D. Kell (License, Ind., 1897): a *member of the* American Medical Association; health officer of Union County, Ind.; secretary of the county board of health; and health officer of Liberty; for 40 years a practitioner of that place; died at his home, August 10, after an illness of three weeks, aged 67.

Hugh B. McMaster, M.D. Kentucky School of Medicine, Louisville, 1887; a member of the *American* Medical Association; and one of the most prominent practitioners of Waynesboro, Ga.; local surgeon of the Central of Georgia Railway; died in Tryon, N. C., August 21, after a long illness, aged 52.

Alpheus Orlando Buster, M.D. Medical Department of Fort Worth University, Fort Worth, Texas. 1899; a member of the American Medical Association; who had recently returned from China; died at his home in El Paso. Texas, from tubercular meningitis, April 25, after an illness of ten days, aged 36.

Georgiana Delaney Read, M.D. New York Medical College and Hospital for Women, 1882; for 14 years resident physician at the Moses Brown School, Providence. R. I.; died in the Homeopathic Hospital in that city August 21, from heart disease, following an attack of pneumonia, aged 66.

Bennett Frank Godfrey, M.D. Chattanooga, Medical College, Medical Department, Grant University, Chattanooga, Tenn., 1897; of Laurens, S. C.; a member of the South Carolina Medical Association; died from internal hemorrhage, 20 hours after a runaway accident, August 14, aged 35.

Peter Dockler, an old practitioner of Onaga, Kan.; said to have been a surgeon in the French army; a veteran of the Mexican and Civil Wars; died suddenly at his home in Onaga, March 30, from senile debility, aged 102.

Frank B. Glenn, M.D. Medical College of Virginia, Richmond, 1907; of Richmond, Va.; an interne at St. Vincent's Hospital, Norfolk; died in that institution, August 11, after an operation for appendicitis, aged 30.

George H. Smith, M.D. New York Homeopathic Medical College and Hospital, New York City, 1869; died at his home in Williamsburg, Brooklyn, August 20, from septicemia due to an operation wound, after an illness of three weeks, aged 64.

Julien A. Smith, M.D. New York University Medical College, 1882; a member of the Medical Society of the State of North Carolina; of Durham, N. C.; died at the Watts Hospital in that city, August 14, after a surgical operation, aged 53.

Ira Benjamin Archer, M.D. Baltimore, 1890; died at his home in North San Juan, Cal., May 31, from the effect of a self-inflicted gunshot wound of the head while suffering from mental aberration, aged 44.

Albert F. Randolph, M.D. State University of Iowa, College of Medicine, Iowa City, 1891; of Koszta, Iowa: a member of the Iowa State Medical Society; died in a hospital in Sioux City, Iowa, January 11.

George Washington Pangle, M.D. King Eclectic Medical College, Des Moines, Iowa, 1885; died at his home in Council Bluffs, Iowa, August 13, from kidney disease, after an illness of three weeks, aged 62.

William Hicks Cunningham, M.D. Medico-Chirurgical College of Philadelphia, 1904; died at his home in Vineland, N. J., August 10, from recto-vesical abscess, after an illness of six weeks, aged 47.

Clempson B. Kennedy, M.D. Jefferson Medical College, Philadelphia, 1870; of Parsons, Kan.; a pioneer practitioner of Labette County; died suddenly at Erie, Kan., August 15, from heart disease.

James A. Lonsdale, M.D. American Medical College, Eclectic, St. Louis, 1891; of Detroit, Mich.; died suddenly from cerebral hemorrhage, at Grace Hospital, Detroit, August 12, aged 63.

Elisha B. Adams, M.D. Vanderbilt University, Medical Department, Nashville, Tenn.; a practitioner of Emory, Texas, for 15 years, died February 15, from pneumonia.

John S. Moore, M.D. University of Louisville (Ky.) Medical Department, 1874; died at his home in New Hope, Ky., August 20, after a prolonged illness.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

The Doctor as a Public Educator.

The above is the theme of a practical paper in the *New York Medical Journal,* July 25, by Dr. Frank Van Fleet. After emphasizing the duties of the doctor as a public educator and commenting on the spirit of indifference generally shown toward such responsibility, Dr. Van Fleet inquires into the reasons for such indifference, and this he attributes to the tendency of American citizens to allow politicians to make the laws. In European and South American republics, physicians often participate in public life. In the New York state legislature for last year seven of the 201 members were licensed physicians. Dr. Van Fleet holds it is not opportunity but influence which is lacking. He says:

> There is nothing to indicate that the presence of the seven physicians in the legislature of New York exerted any influence one way or the other on the bills introduced in the body having to do with the public health. I think I can say without fear of contradiction that in the thirteen years that I have been connected with the committees on legislation of the state or county medical societies, I can not recall a time when the presence of a physician as a member of the legislature had the slightest influence in any way.

He believes, however, that the medical profession is capable of exerting a great influence for good if it were willing to do so. He says:

> People are willing to be guided by us along medical and public-health lines because they think we have knowledge which they do not possess and that we, as a profession, are not actuated by selfish motives. They look to us for enlightenment, or in other words, they look to us to guide them and they ought not to look in vain. This age in which we live is an age of education: indeed, the people are education crazy. They are clamoring for information and if they can not obtain it from reliable sources, they will get it from sources which are unreliable. . . . I am glad to note that our profession is coming to see the logic of this and that many of the leaders of the profession are manifesting a greater willingness to talk to the public on these vital questions than heretofore. . . . We should be public educators, and I hail the coming day when our medical societies will give public lectures on public health subjects as the Medical Society of the County of Kings has been doing the past winter months.

Among the subjects on which the public needs enlightenment is medical legislation. Van Fleet believes that the purpose of medical practice laws is to protect the public, with the infliction of the least possible hardship on those who would practice medicine. He holds, however, that the medical laws in this country do not protect the public, but impose on those who comply with them an unnecessary amount of hardship, while special laws permit a privileged class to practice medicine in special lines for which they are not fitted. This practically amounts to penalizing the properly educated physicians and putting a premium on ignorance.

The management of public schools and the systematic inspection of pupils, the control of tuberculosis and other infectious diseases, the absurdity of the recent antivivisection craze, and the ignorance of governors and legislators in securing laws making physicians out of opticians, are also discussed. The duty of the medical profession to see that questions relating to public health are properly placed before the people is strongly emphasized. Dr. Van Fleet feels that the public, when once enlightened, will support the medical profession in its efforts to secure better conditions and that if the people do not cooperate with the physicians, it is because they do not understand the questions at issue.

A Reductio ad Absurdum of Ethics.

There is a proverb to the effect that "one can not have too much of a good thing." But we must not forget that in this life at any rate the absolute good is never attainable and that that which was good at a given time and under given conditions may cease to be good at another time and under other conditions. We are moved to these remarks by a discussion on the Ethics of Medical Consultation by the Central Ethical Committee of the British Medical Association,[1] where the following amendment was proposed to the rule regarding the non-supplanting of the attending physician by another physician called in consultation.

"A practitioner who has seen a case in consultation should not supersede the attending practitioner or attend the case in any future illness without the permission of the introducer."

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[1] Brit. Med. Jour., Aug. 1, 1908, Supplement, p. 125

This drastic amendment appears to have been brought forward at the instance of a divisional ethical committee (a division corresponds organically to a state association in the American Medical Association), which held that "if a patient would not continue with the original practitioner he might call in any other except one who had been introduced as a consultant." This bubble of sapiency was pricked by the suggestion that a man, who had been practicing unopposed in a country village, suddenly confronted with a younger and more vigorous man, would only need, in order to protect his own practice, to call the other physician into consultation all round as quickly as possible. Needless to say the amendment was not carried.

The whole argument hinges on a misconception. The proposer of the amendment stated: "It was said that this was an attempt to interfere with the rights of the patient but the rights of the practitioner must be asserted." The practitioner, however, has no rights at all, so far as regards the patient's freedom of choice, beyond the right that every gentleman has to be treated as a gentleman—i. e., with ordinary courtesy. He has rights, however, against his brother practitioner, the consultant, which can be enforced in a disciplinary manner through ethical committees if the consultant can be shown to have used any measures tending to cause the patient to waver in his allegiance to his regular attendant. It is true that it is often difficult to prove such treachery, and also that those who are capable of committing it are the very ones least likely to stand in awe of any disciplinary enactments; but that is hardly an adequate reason for penalizing patients generally, to add persuasiveness to the decrees of an ethical committee in occasional instances. The worst injury that can be inflicted on any good cause is to render it ridiculous.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR JOHN H BLACKBURN, DIRECTOR
Bowling Green, Kentucky

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

First Month.

Third Weekly Meeting.

CHRONIC VALVULAR LESIONS, LEFT HEART

Aortic Lesions

Regurgitation

Etiology and Pathology.—Age, sex and frequency. Congenital malformation, usual changes in valves; endocarditis valvular changes; arteriosclerosis, (a) strain from exertion, occupation, etc., (b) alcohol, (c) syphilis, valvular and aortic changes: rupture of segment of valve; relative insufficiency, dilated ring. Mechanics: regurgitation, dilatation of ventricle, hypertrophy later, "cor bovinum," arterial anemia, mitral incompetency, effect on left auricle on right heart, myocardial changes.

Physical Signs.—Inspection: apex beat, pulsation, cardiac and arterial. Palpation: cardiac thrill, pulse, sphygmographic tracings. Percussion: outline of dulness. Auscultation: murmur, time, site, intensity, transmission. Character of normal sounds. Secondary murmur.

Stenosis.

Etiology and Pathology.—Age, sex, frequency. Adhesion of segments, thinning or thickening of segments, calcareous deposits. Relative stenosis, with dilated aorta. Associated incompetence. Mechanics: increased resistance, hypertrophy, dilatation later, auricular changes, effect on lungs and right heart.

Physical Signs.—Inspection; apex beat, impulse, emphysematous chest. Palpation: thrill, intensity and location, pulse. Percussion: area of dulness. Auscultation: murmur, quality, time, location, intensity, transmission. Normal heart sounds. Sphygmographic tracings.

Mitral Lesions

Regurgitation.

Etiology and Pathology.—Age, sex, frequency. Changes in segments and chordæ tendineæ, endocarditis. Calcareous plates or rings. Associated stenosis. Changes in ventricular walls, dilatation or muscular incompetence. Mechanics: regurgitation, dilated auricle, hypertrophy, dilatation and hypertrophy of left ventricle, changes in right ventricle, in right auricle, in pulmonary vessels, in lungs, later in systemic veins, changes in viscera, "dropsy."

Physical Signs.—Inspection: apex beat, ventricular and venous impulses. Palpation: thrill, impulse, pulse. Percussion: area of dulness. Auscultation: murmur, character, time, location, intensity, transmission, effect of posture. Normal heart sounds.

Stenosis

Etiology and Pathology.—Age, sex, frequency. Endocarditic changes, in segments, ring, chordæ tendineæ. Associated incompetence. Congenital origin? Mechanics: stenosis, dilatation and hypertrophy of auricle, effects on pulmonary artery and veins, changes in right ventricle, relative tricuspid incompetency, effects on systemic veins.

Physical Signs.—Inspection: apex beat, impulse, right ventricle. Palpation: thrill, impulse, pulse. Percussion: area of dulness. Auscultation: murmur, character, location, time, transmission. Normal heart sounds. Sounds in "broken compensation."

Medicolegal

"Pulling Down Sensation" to be Assumed.

The Kansas City Court of Appeals does not agree with the contention in the personal injury case of Saeger vs. Wabash Railroad Co., that an instruction given the jury was vicious and prejudicial to the defendant in calling special attention to the "pulling down sensation or prolapsus of the womb," when there was no evidence of such sensation. The court says that as the plaintiff's injury resulted in prolapsus uteri, it was not necessary to prove such sensation, for prolapsus is a pulling down of the womb, and it is to be assumed that the sensation naturally and necessarily follows.

Prior Treatment Subject for Cross-Examination.

The Supreme Court of New York, Appellate Division, Second Department, says, in the personal injury case of Seaman vs. Mott, that when the patient called the physician to give evidence as to injury, pain, and suffering attributed to the accident, the patient could not exclude, as privileged, questions by the defendant as to professional treatment prior to this accident, for such questions might have shown the prior existence of such physical conditions, at least to a degree. The principle of privilege is not intended, as the courts have said, to be both a sword and a shield for the patient.

Admissibility of Evidence of Condition of Eyes as Proof of Internal Injury.

The Court of Appeals of Kentucky says that one of the questions in Louisville Railway Co. vs. Ellerhorst, a personal injury case brought by the latter party, was what evidence was competent to sustain the allegations of the plaintiff's petition. She alleged in her petition that she was injured in her womb, in her ovaries, in her bowels, that she had had frequent micturition: and that she had sustained a shock to her nervous system. A diseased condition must be manifested by outward symptoms. If the plaintiff had been unable to show any external manifestations of the injuries of which she complained, the jury would reasonably conclude that she was not as badly hurt as she alleged. If she had shown that she had suffered from insomnia since the accident, and had been a healthy woman up to that time, it would have been some evidence of a nervous derangement. A nervous shock often shows itself in the eyes; and, if the plaintiff's eyes had remained normal it would have been some evidence that the nervous shock was not very serious. Where specific injuries are sued for, any external symptoms which are evidence of the injury may properly be admitted, for it is only by the external symptoms that an internal injury may be judged. As the injury to the plaintiff's eye was not sued for, the court properly excluded it from the consideration of the jury in fixing damages, but as it furnished some evidence of the internal injury of which she complained the proof was properly allowed to go to the jury.

Restriction on Power to Exclude Unvaccinated Pupils

The Supreme Court of Illinois says, in People, on the relation of Louise Jenkins vs. Board of Education of City of Chicago, that not only has the legislature never prescribed vaccination as a condition to the enjoyment of the legal right to attend public schools, but it has never conferred on cities the power to do so. If the city of Chicago has power to pass any ordinance on the subject, the power is derived from the authority conferred on the city council to appoint a board of health and prescribe its powers and duties, to do all acts and make all regulations which may be necessary or expedient for the promotion of health or the suppression of disease and to pass all ordinances and rules and to make all regulations proper or necessary to carry into effect such authority.

The general police powers above enumerated to pass ordinances and make regulations for the promotion of health or the suppression of disease do not include the passage of an ordinance making vaccination a condition precedent to the right to an education, such as one passed by the city of Chicago, one section of which provided: "No principal or person in charge or control of any school shall admit to such school any child who shall not have been vaccinated within seven years next preceding the admission or application for admission to any such school of such child, nor shall any such principal or person retain in or permit to attend any such school any child who shall not have been vaccinated as provided in this article."

An ordinance passed by reason of such authority must be reasonable in its character, and rest on the ground that it is a necessary means of preserving the public health. In the case of Potts vs. Breen, 167 Ill., 67, it was held that the exclusion of a child from a public school because of a refusal to be vaccinated can only be justified where such course is necessary, or reasonably appears to be necessary, in case of an existing or threatened epidemic of smallpox and to prevent the spread of the disease. In the case of Lawbaugh vs. Board of Education, 177 Ill. 572, the court adhered to those principles, and declined to further discuss them, although earnestly urged to reconsider the former decision.

The section of the ordinance quoted was null and void and afforded no justification for denying the relator admission to the school, whether the denial of her right was at the instance of the health commissioner, the health department, or any other authority.

The answer alleged, as a matter of fact, that on Oct. 29, 1907, the disease of smallpox was prevalent in the district in which the school was located, within such a radius as to make it dangerous for all persons therein residing who had not been vaccinated, that the commissioner of health declared smallpox to be epidemic in said district, and instructions were given by the health department to exclude all children who had not been vaccinated in accordance with the terms of the ordinance.

The terms of the ordinance were that no child should attend the public schools who had not been vaccinated within seven years, and did not constitute a lawful exercise of any power conferred on the city. The health commissioner was a purely ministerial officer and had no legislative powers whatever. The ordinance did not purport to give him authority to exercise such powers or to make any rules or regulations, except in cases of emergency until they could be reported to the city council for approval or rejection. He could only be authorized to perform administrative duties in pursuance of some ordinance of the city, and there was no valid ordinance authorizing the exclusion of the relator from the public school which she had a legal right to attend.

There is nothing in the nature of an emergency in the occasional recurrence of the well known disease of smallpox in a city like Chicago which may not be provided for by general rules and regulations prescribed by the legislative authority of the city. The board of education, which had charge of the public schools, had made no rule or regulation on the subject of such epidemics, and neither had the city council. The board's answer did not make known any ordinance, rule, or regulation for the exclusion from the schools of children not vaccinated in the event that an epidemic of smallpox existed in the vicinity of a school, or was reasonably apprehended, and, in the Supreme Court's opinion the trial court erred in overruling a demurrer to the answer.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal.

August 20

1 *Surgical Rights of the Public. J. C. Munro, Boston.
2 High Frequency Electricity in Treatment of Cardiac Disease. H. C. Arnold, Boston.
3 Border Line Cases of Mental Deficiency. C. C. Beckley, Lancaster, Mass.
4 High Grade Mental Defectives. W. N. Bullard, Boston.

1. **Surgical Rights of the Public.**—In this article, the address in surgery before the Canadian Medical Association, Munro emphasizes some points which are usually overlooked in the practice of surgery. He begins by referring to the German system of insuring the laboring classes against sickness and states that the insurance was established because the poor have a right to be protected against the various accidents and illnesses incident to our complex modern life. He then goes on to state that both rich and poor have an equal right to be protected against unnecessary suffering, disease and death. Using this as a text, he calls attention to the question of elective major surgery as attempted in large or small surgical centers by men without surgical skill, by amateurs and by the nondescript commercial type of man who operates for the fee and not for the benefit of the patient. He condemns the internist who deals with a surgical lesion until forced to advise an operation not as a preventive or as a curative measure, but as a last resort. Munro believes that all the facts in the case should be laid honestly before the patient early in the disease and that he be allowed to decide whether or not he will accept the operative risk. Munro also deplores the practice of some staff surgeons in allowing internes with only a few months' experience to undertake major operations, and asserts that to place the responsibility for a major operation on an inexperienced man is not only fundamentally wrong but occasionally criminal. He also says that the after-treatment should be supervised by the surgeon himself and not left to assistants. A patient consults a surgeon because of his experience and ability, and it is not right, says Munro, that the surgeon should evade the responsibility. He emphasizes the importance of skilled anesthetists and declares that an unskilled anesthetist can prolong beyond the limits of safety an operation that would be short, and that he increases the danger of postoperative pneumonia. The same criticisms apply to the ever-changing house surgeons and the general practitioners who assist in major operations. He advocates reform in the present system of hospital management. As constituted at present, he asserts, many public hospitals are overweighted by cumbersome surgical staffs which could be reduced to one third or one sixth of their present number. A chief of staff should be in charge of from 50 to 100 beds. If he has a larger number his assistants or colleagues should be capable of assuming charge in an emergency. He should be allowed great freedom in choosing his assistants, who should have demonstrated their fitness while in subordinate positions. Promotion should be for ability and not by reason of seniority. The routine inexpert work in the laboratories and wards should be performed by students delegated by the schools and

accepted without competitive examination, because such work should be part of the student's curriculum. In conclusion he states that he would not have it inferred that there is no other side to surgery than fault-finding and criticism No profession is without flaws. Every profession reaches a higher plane with each decade, and it is mainly by the elimination of the petty obstacles that our profession is destined to attain a level that can never be reached by others

Medical Record, New York.

August 22.

5 Appearance of Heteroplastic Tumors in the Transplantations of the New Growths of Animals Dr von Leyden and Carl Lewin Berlin.
6 *Recurrent and Abductor Paralysis of the Larynx, Diagnosis and Treatment W. E Casselberry, Chicago
7 Medical Treatment of Appendicitis G E Crukshank Windsor, Ont.
8 Physiology and Pathology of the Emotions the Physical Bases of Mental Etiology H Wakefield, New York
9 Marriage from a Medical View Point C G Cumston Boston
10 Sterility in Women B S Talmey, New York

6 **Paralysis of the Larynx.**—Casselberry discusses the diagnosis of unilateral recurrent nerve paralysis which when complete results in the fixation of one vocal cord in the cadaveric position. The cracked, raucous voice is suggestive rather than distinctive, but it is usually the one small symptom which first causes the patient to seek relief The same is true of the partial stridor which may or may not usher in unilateral abductor paralysis in which, the dilator muscle alone being powerless. the vocal cord is retained in a position closing over one half of the larynx. In 40 cases of the 'aneurismal group" the left recurrent nerve was paralyzed by an aneurism in eight and the right recurrent in six, including in both numbers those in whom the opposite cord was likewise but less affected. In the "pleuritis group" all the cases were of tuberculous origin. Means of confirming the diagnosis in this group are as yet sparse. Casselberry believes that the x-ray might be of use in excluding or demonstrating the presence of enlarged mediastinal glands, which in tuberculous individuals constitute a possible cause of pressure on the recurrent nerves on the left side; but on the right side enlarged glands so situated could scarcely be beyond the reach of palpation. In the "tumor group," unlike the "aneurismal group." the vocal disability appeared only as a late and gradual development. Esophagoscopy is useful in diagnosis of these forms of paralysis, although usually by the time a vocal paralysis supervenes in cancer of the esophagus the diagnosis is plain The so called lazy cord is a recognized symptom of carcinoma of the larynx but Casselberry believes that it is not generally known that total immobility of a cord may be the first visible evidence of this condition. He also discusses vocal paralyses due to lesions in the medulla and in the cerebral cortex

New York Medical Journal.

August 22

11 *Cystitis R E Davison, Pittsburg, Pa
12 Two Unusual Cystoscopic Pictures J. B Squier, New York
13 *Car Sickness I. S Wile, New York
14 Important Points in the Anatomy and Surgery of the Peritoneum A J Woolf, Hartford, Conn
15 *Oxygen in Treatment of Tuberculous Peritonitis J A McGlinn, Philadelphia.
16 Etiology and Treatment of Eczema Z Feldstein, New York
17 Recent Work on Spirillar Fevers F P Mackie Bombay India

11. **Cystitis.**—Davison describes the interior architecture of the normal bladder as seen by cystoscopy. In the etiology of cystitis he regards trauma, congestion and retention of urine as the predisposing causes and micro-organisms, of which the colon bacillus is first in order of frequency. as the direct cause The gonococcus, strange to say, appears eighth on the list in Casper's classification, which Davison quotes. A few bacteria throw off ferments which decompose urea forming a carbonate of ammonium. The chemical reaction of the urine in cystitis is usually acid. Bacteria may gain entrance to the bladder in many ways, of which the urethra is the most common. The length of the male urethra protects the bladder from invasion to some degree, but the short female urethra offers little protection Descending infections from the kidneys and ureters have of late been given an important place in the causation of cystitis. Davison discusses the pathology, symptomatology, diagnosis, prophylaxis and treatment, which includes free use of pure water, light and bland food, prohibition of alcoholic beverages except in the weakened and aged, and the administration of hexamethylenamin. In acute cystitis the patient should be put to bed with hips elevated. Heat and anodynes are recommended, and infusion of buchu seems to possess curative properties. In chronic cystitis the cause must be removed. the bladder cleansed by irrigation, the reaction augmented, and the local blood supply improved. He gives various antiseptic solutions for irrigation In the female the short urethra allows topical applications to be made, e. g., a 10 per cent. solution of silver nitrate applied through the Kelly cystoscope. The author is not in sympathy with the cystotomies done for the relief of cystitis in women or in men It is questionable whether they should ever be done, with the possible exception of cystitis caused by a malignant growth in the bladder. The procedure is opposed in every sense to the pathology present.

13. **Car Sickness.**—Wile discusses the various views regarding sea sickness and remarks on the paucity of literature concerning its analogue, car sickness, by which is meant the series of unpleasant symptoms. such as giddiness. staggering, nausea, vomiting. etc, due to riding in various vehicles. He regards car sickness as a functional neurosis. He points out that while sea sickness and car sickness belong to the same category of neuroses. they are not necessarily identical in origin or course: first class sailors may suffer from car sickness, and very poor sailors may be free from it. It is comparatively common in infancy, usually beginning in fact in childhood. It is more frequent among females than males and appears to have an hereditary tendency, for Wile has frequently noted car sickness occurring in three generations, but in the female members only. He considers its relation to a lack of proper balance. All senses contribute to the sum of sensation essential for a sense of equilibrium. If any part of the sensory impressions is erroneous or departs from the individual normal, a disturbance of the sense of equilibrium results. and certain reflex conditions. nausea, pallor. rapid pulse, clammy skin, vomiting, etc. ensue. He considers in detail the various routes of affection of the different senses and concludes that car sickness is a motor neurosis due to a disturbance of equilibrium, dependent on irritation of the vestibular nerve. originating in disturbance of the endolymph He closes with the following practical points: Parents seldom say their children suffer from car sickness unless specifically asked. The vomiting of car sickness at times may suggest an overloaded stomach or the onset of an infectious disease. In adults car sickness has frequently caused a suspicion of drunkenness to fall on its victim; it has also been mistaken for appendicitis. It is most important to distinctively exclude car sickness in all cases of acute illness occurring on trains and other cars, just as one must distinguish sea sickness from other sickness at sea. The condition of a car sick person may appear most serious—in fact, suggest a fatal outcome, but this does not occur. A careful study by otologists and pathologists of intraaural conditions in children known to have car sickness might give some little light on the true proximate cause of what is now merely termed a neurosis

15. **Oxygen in Tuberculous Peritonitis.**—McGlinn points out that three types of tuberculous peritonitis are recognized: the ascitic, the fibrous and the ulcerated. He quotes various authorities to show that by the plans of treatment now in vogue the fibrous and ulcerous forms of tuberculous peritonitis are not amenable to treatment, and that at best only 75 per cent. of the ascitic forms can be cured Since April. 1904, he has used oxygen in 15 cases. 4 of which were of the fibrous variety, with excellent results, notwithstanding that his reasoning he now considers faulty. He briefly reports the 4 cases. and describes the method as follows: The water bottle of the oxygen apparatus is sterilized and filled with sterile water. The tube leading from the bottle and the rubber tip are sterilized The tip is covered with several thicknesses of sterile gauze The oxygen is introduced through the abdom

inal incision until the abdomen becomes inflated. The incision is then closed with gauze, and the oxygen is allowed to remain for several minutes. The gas is then allowed to escape, and the peritoneal cavity is filled again and again.

Lancet-Clinic, Cincinnati.

August 22

18 Internal Rotation and Lacerations of the Perineum. G. B. Twitchell, Cincinnati.
19 *Perineal Section for Obstruction of Prostatic Urethra. C. E. Barnett, Ft. Wayne, Ind.
20 Relation of the Physician to the Administration of Justice. G. Bambach, Ripley, Ohio.

19. Abstracted in The Journal, Nov. 2, 1907, p. 1552.

The Medical Fortnightly, St. Louis.

August 10

21 Medical Treatment of Gallstone Disease. R. W. Wilcox, New York.
22 Loss of Appetite. T. F. Chandler, Forest City, Mo.
23 Problems of Biologic Chemistry. J. Clements, Wichita, Kan.
24 Treatment of Tuberculosis in Private Practice. M. H. Fussell, Philadelphia.

University of Pennsylvania Medical Bulletin, Philadelphia.

July

25 *Review of Cases of Various Types of Enteroptosis. J. W. Luther, Philadelphia.
26 Postgraduate Study in Berlin. F. E. Keene, Philadelphia.
27 Care of Postoperative Patients, with Special Reference to Intestinal and Renal Functions. S. W. Moorehead, Philadelphia.
28 Calcified Pancreatic Cyst. G. W. Outerbridge, Philadelphia.
29 Acute Lymphopenic Lymphatic Leukemia. R. S. Lavenson, Philadelphia.

25. **Enteroptosis.**—Luther reports thirty-five cases of various types of enteroptosis, and states that the symptoms divide themselves into three groups, viz., neurotic, abdominal pains and unusual sensations; gastrointestinal disturbances. In ptosis of the stomach and transverse colon these three groups are perhaps most severe, the second group of pains being most vague and least frequent. The third group refers particularly to gastric derangements. In redundancy and ptosis of the sigmoid, the first two groups occur most frequently. The pains are more definitely located and severe. The gastrointestinal disturbances are limited, as a rule, to irregularities in the evacuation of the bowels. As a consequence of the uncertainty of symptoms, the diagnosis of these conditions can not be made safely without some mechanical or physical aid. Inflation of the stomach and colon enables one to outline the stomach and transverse colon with considerable accuracy, but the sigmoid can not always be located with the same degree of certainty. Here the x-rays are invaluable. In all cases in which ptosis of the hollow viscera is diagnosticated or suspected, a bismuth injection followed by an x-ray exposure should be employed. It not only makes or corroborates the diagnosis, but it aids the surgeon during the operation and enables him to plan a means of relief before the incision is made.

American Journal of Medical Sciences, Philadelphia.

August

30 *Splenic Anemia, Splenectomy and Recovery. With Studies of the Blood Covering a Period of Seven Years. M. J. Lewis, Philadelphia.
31 *Laryngeal Tuberculosis. B. Robinson, New York.
32 *Primary Tuberculosis of the Mesenteric Glands. Report of Infections with Bacilli of the Human Type. A. F. Hess, New York.
33 *Blood Cultures in Typhoid. A. A. Epstein, New York.
34 Uncertain Results of Suturing Nerves. G. T. Vaughan, Washington, D. C.
35 *Pathogenesis of Tabes Dorsalis. T. A. Williams, Washington, D. C.
36 Herpetic Inflammations of the Geniculate Ganglion. A Syndrome Characterized by Herpes Zoster Oticus, Facialis or Occipitocollaris, with Facial Palsy and Auditory Symptoms. J. R. Hunt, New York.
37 Present Status of Experimental Arterial Disease. I. Adler, New York.
38 *Bacteriology of the Puerperal Uterus. W. R. Nicholson and Joseph S. Evans, Philadelphia.

30. Abstracted in The Journal, June 6, 1908, p. 1930.

31. **Laryngeal Tuberculosis.**—Robinson says that in every case and emphatically in young adults, in whom a cold or cough has unduly persisted despite rational treatment, or *whenever the causation seems in any way obscure*, we should invariably insist on a laryngeal examination. Often he has seen an ulceration of the vocal cord, of the arytenoid cartilage or commissure, of the arytenoid folds, and even of the epiglottis itself, when the *laryngeal symptoms were not unduly pronounced.* And these cases again occur, although perhaps infrequently, when the intrapulmonary condition is not perfectly clear and when *no tubercle bacilli* have yet been discovered in the sputum. The two essential things to be insisted on, in Robinson's opinion, in the way of protective and curative treatment, are: 1. Rest *for* the larynx; 2, inhalations. He rarely makes use of the galvanic cautery, and the later surgical methods of Krause and Heryng, punching and curetting do not appeal to him. As to posture, the patient lying with head hanging over the bed and sucking fluid through a rubber tube from a pitcher below will afford relief in swallowing. Robinson lays most stress, however, on the constant use of a perforated zinc inhaler covering the mouth and nose, and charged with creosote and alcohol, or, if there is much irritation, with beechwood creosote, alcohol and spirit of chloroform in equal parts. He emphasizes particularly the following facts. 1. There is a certain number of patients affected with laryngeal tuberculosis, just as those with pulmonary tuberculosis, who do not recover, in whom the disease is not even arrested no matter what treatment may be followed. These cases remain stationary, perhaps, for a little while, but even this is doubtful, and, as a rule, despite all our efforts and doings, the disease marches steadily onward and gradually grows worse until the end comes. 2. While we can not predicate absolutely, from the intralaryngeal evidences of tuberculous disease, as to the extent and stage of the tuberculous disease of the lungs, yet usually, if one localization of tuberculous disease is of bad augury, so is the other in the larger proportion of cases.

32. **Primary Tuberculosis of Mesenteric Glands.**—Hess summarizes his paper as follows: A review of cases of primary mesenteric gland tuberculosis in which the type of bacillus has been differentiated shows that over 60 per cent. have been caused by the bovine type of bacillus. Among children the bovine infections greatly prevailed, whereas in adults infections with the human variety were in the majority. No pathologic or clinical differentiation of the two forms of tuberculosis is as yet possible. In children, as well as in adults, bovine or human tuberculosis may become limited and healed and the bacilli may die. The cases reported in this paper, two in children and one in a young adult, were due to the human variety of bacillus, as shown by the morphology, cultural characteristics, and virulence of the isolated strains.

33. **Blood Cultures in Typhoid.**—Epstein sums up his paper with the following conclusions:

1. The bactericidal influence of the blood in typhoid fever in relation to the obtaining of positive results in the blood cultures has been overestimated. Great dilutions of the blood are not essential; a number of media will give good results.

2. The best results were obtained with the use of 2 per cent. glucose bouillon, 2 per cent. glucose agar, and ammonium oxalate solution.

3. On 2 per cent. glucose agar the typhoid bacillus grows in such a characteristic way that the presence of a certain type of *colony on it is quite* diagnostic, and the absence of such colony points very strongly against the presence of the typhoid bacillus.

4. The bile media were not found to be so reliable as the media mentioned above.

5. The results presented are in agreement with those obtained by others. The total positive results obtained are in agreement with the results obtained by others, notwithstanding the fact that more cases were studied later in the course of the disease.

6. Although the maximum results are obtained in the first and second week, there is not sufficient proof as yet that the bacilli are present in the blood from the very inception of the fever.

7. Protracted cases yield positive results if the continuation of the fever is not due to complications (or starvation).

8. A continued fever lasting several days after the blood has been shown to be free from typhoid bacilli will nearly always prove not to be a case of typhoid fever.

9. The results in relapse are the same as those in the primary attacks. The bacillemia in the relapse is due to a new invasion.

10. We can not draw any definite conclusion as yet concerning the value of the blood cultures in determining the prognosis.

35. **Tabes Dorsalis.**—This is a more elaborate paper than that on the same subject by the same author in the *Virginia Medical Semi-Monthly*, June, 1908, and abstracted in The Journal, August 1. He draws the following conclusions:

1. Tabes dorsalis is a secondary degeneration in the posterior columns, due to a chronic meningitis, very probably of syphilitic nature.

2. The arrangement of the meninges surrounding the radicular nerve renders it peculiarly susceptible at that spot to mechanical or toxic injury.

3. The unequal incidence of the affection on different fibers of the posterior root is probably due to unascertained peculiarity of structure or arrangement of fasciculi, rather than to any selective toxic influence.

4. The lesions tend toward resolution and arrest, even though the process may continue during the life of the individual

5. With this arrest, regeneration tends to occur in the radicular nerve, the amount in the anterior root being relatively considerable, while that in the posterior root is less in amount and functionally insignificant, as a rule.

6. The otherwise inexplicable vasomotor and cranial nerve symptoms and postmortem findings in this disease are shown thus to be necessary concomitants of the tabetic process.

7. The question of the pathogenesis of the polyneuritic manifestations found in tabetics is not yet answered.

38. **Bacteriology of Puerperal Uterus.**—Nicholson and Evans say that taken in connection with the studies on the bacteriology of the blood which have been made in their clinic, they feel justified in making the following statements: 1. If both blood and intrauterine cultures are negative, the temperature is due to some intercurrent condition; 2. if the intrauterine culture is positive, but the blood culture is negative, they consider the infection to be still local in its manifestations; and 3, if the intrauterine culture is negative but the blood culture is positive—a very unusual condition—they are justified by their general conclusions in considering that the case is one of general infection, the local endometrial condition having been either sterile from the first, or having become so gradually after the general infection developed. They draw the following conclusions:

1. The uterine lochia is sterile in normal cases throughout the puerperium.
2. *Streptococci are never present within the uterine cavity without causing symptoms.*
3. In a few instances non-pathogenic germs may be found in cultures in afebrile cases, but there is every reason to believe that their presence is really the result either of contamination during the extraction of the lochia or of their introduction during obstetric manipulation.
4. Ascendance of the gonococcus is an event of comparative rarity, though the frequency of this organism would of itself give reason to expect otherwise.
5. Infection of the endometrium is an ever-present danger in culturing within a few days of delivery.
6. A study of the bacterial content of the puerperal uterus is of great importance as a subsidiary means of diagnosing septic infection following delivery.
7. As nearly as may be, a technic should be adopted which will prevent contamination during the removal of the lochia, in order to avoid a vitiated result.

Archives of Pediatrics, New York.

July.

39 *Public School Education. C. G. Kerley, New York.
40 *A Plan of Dealing with Atrophic Infants and Children. H. D. Chapin, New York.
41 *An Unusual Type of Acute Nephritis in Childhood. J. L. Morse, Boston.
42 *The Colored Children of Jamaica, with Especial Reference to Rickets and to Mongolian Spots. A. E. Vipond, Montreal, Canada.
43 *Need of Postgraduate Instruction in Pediatrics. A. Caillé, New York.
44 Recurring Empyema. F. Huber, New York.
45 Fatal Hemoptysis in Children. W. E. Magruder, Baltimore
46 Sporadic Cretinism (Type Fruste). C. F. Judson and W. N. Bradley, Philadelphia.

39. Abstracted in THE JOURNAL, July 11, 1908, p. 157.

40. Abstracted in THE JOURNAL, July 18, 1908, p. 246.

41. Abstracted in THE JOURNAL, July 11, 1908, p. 156.

42. **Mongolian Spots.**—Vipond examined 217 children of Jamaica, West Indies, of whom 89 were pure black, 48 three-quarters black, 57 were Sambo (offspring of a negro and a mulatto), and the remaining 23 were light. He found Mongolian spots in 44—8 pure black, 18 three-quarters black, 15 Sambo, and 3 light children. Out of 28 children under one month old 22 had Mongolian spots; out of 40 at six months and under 27 showed the spots, and out of 50 children under one year 33 had spots. Thus there were Mongolian spots in 80 per cent. of colored children under ten days old, which percentage does not change to any degree up to a month. As they advance in age the percentage of spots lessens. If the child is too dark or too light the spots are less likely to be present. As to site, they were most frequent at the lower part of the sacrum, then in the gluteal region. They are also found on the back, shoulder, thigh, hip, lower leg, etc. The color of the spots varies from bluish to greenish.

43. Abstracted in THE JOURNAL, July 18, 1908, p. 246.

Bulletin of the Lying-in Hospital, New York.

March.

47 *Brachial Birth Palsy. P. Bailey, New York.
48 *Gangrene of the Extremities in the New-Born. G. W. Kosmak, New York.
49 *Prognostic Value of the Nuclear Count, Associated with Pregnancy and the Puerperium. E. Smith and A. Lansing, New York.
50 Complete Congenital Opacities of Both Corneæ. L. W. Callan, New York.
51 Status Lymphaticus. E. L. Coolidge, New York.
52 *Postpartum Bacteriemia. J. E. Welch, New York.
53 Significance of Albuminuria in Pregnancy. F. E. Sondern, New York.

47. **Brachial Birth Palsy.**—Bailey points out that it is remarkable that brachial birth palsy did not come under systematic consideration earlier than the end of the nineteenth century, although doubtless as old as the human race. It *concerns the obstetrician more than any other practitioner.* While pressure is the generally accepted cause of the lesion, Bailey is of the opinion, with others, that most cases result, not from pressure on the plexus, but from traction on it. If the axis of the head is drawn away from the long axis of the body by 30 degrees the cords of the plexus are stretched to the danger point. This is liable to happen in vertex presentation to hasten the delivery of the shoulder, and in breech presentation to hasten the delivery of the breech. It may also happen in extraction by forceps, and in spontaneous birth the delivered head, by its own weight, may cause traction on the plexus. The type of palsy depends on the part of the plexus injured. The upper arm type is the common variety. The painful symptoms cause the child to lose much sleep and its *nutrition is consequently retarded. The deformities* are due to overaction of the non-paralyzed muscles. The electrical reactions in the paralyzed muscles are degenerative. The degree of disability and deformity varies with the extent of the lesion and with the treatment. In the cases in which movements begin within a few weeks of birth, a favorable result may be counted on. The treatment consists in passive motion, to prevent contracture, and in massage of the affected muscles. If this can be skilfully applied, electricity may be dispensed with. This treatment is not feasible until the hypersensitiveness, if it existed, has passed away.

48. ***Gangrene of Extremities in the New-Born.***—Kosmak describes a case and adds a report of four cases from the literature. He says that it seems very probable that we have to deal with some form of sepsis, the exact nature of which is yet in doubt, as all other factors which might possibly produce gangrene of this type have been ruled out.

49. **The Nuclear Count in Pregnancy and the Puerperium.**—Smith and Lansing, as the result of observations covering 138 cases in the hospital, in which 315 blood counts were made, find that their results differ widely from those of Arneth in all departments of this work. They state that the uncertainty of the nuclear count *in puerperal conditions,* inflammatory and otherwise, can not be explained, and the results obtained from the study of gonorrheal pus, which *seem to contradict Arneth's basic theory,* would indicate that for the present at least little practical aid is to be found in the nuclear count. They record the results of their observa*tions in tabular form.*

52. **Postpartum Bacteriemia.**—Welch arrives at the following conclusions:

1. Postpartum bacteriemia warrants the very gravest prognosis.
2. A prognosis can not be given from the number of colonies per cubic centimeter of blood.
3. A prognosis can not be given from the length of chains found in case of streptococcal infection.
4. Virulence in the rabbit does not correspond to virulence in the human.
5. In 46 cases the percentage of recovery was 64 per cent.

New Orleans Medical and Surgical Journal.

July.

54 Life and Work of James Carroll. J. McFarland, Philadelphia.
55 Annual Report of Dean of the Medical Department of Tulane University. S. E. Chaillé, New Orleans.
56 Pathology of Tuberculosis. O. L. Pothier, New Orleans.
57 *Tuberculosis of the Female Genitals. S. M. D. Clark, New Orleans.
58 *Tuberculosis of the Testicle—Diagnosis and Indications for Operation. S. P. Delaup, New Orleans.
59 *Tuberculosis of the Gastrointestinal Tract. R. Matas, New Orleans.

57. **Tuberculosis of Female Genitalia.**—Clark, in ten years' experience at the Charity Hospital gynecologic clinics, has not seen more than twenty cases. Secondary cases are more frequent than primary. There are no pathognomonic symptoms He describes the clinical picture, differential diagnosis and treatment (which last consists of complete removal followed by plastic work) of tuberculosis of the vulva (the rarest form), of the vagina and cervix, of the uterus, ovaries and tubes The tube is the explanation of the relative frequency of tuberculous peritonitis in the female He discusses gastric and intestinal tuberculosis separately from a statistical viewpoint, and concludes with a statistical summary of the results of operative treatment by well known surgeons

58 **Tuberculosis of Testicle.**—*Delaup* says that tuberculosis of the testicle calls for operative surgical attention more frequently than does a like infection elsewhere in the genito urinary tract Still even here tuberculosis should be treated conservatively He prefers epididymectomy unless the testicle is *too far gone to be saved* Slight tuberculosis *of the organ* may be depended on, he asserts, to heal spontaneously after removal of the epididymis

59 **Tuberculosis of Gastrointestinal 'Tract.** Matas contrasts the past and present conceptions of gastrointestinal tuberculosis It is a relatively frequent primary disease, independent of pulmonary or laryngeal infection and characterized by well defined localized lesions which undergo a typical and systematic evolution into various well recognized clinical types These lesions are the result of the direct inoculation of the mucosa, submucosa and serosa of the intestine with or without participation of the peritoneum or of the mesenteric lymphatics The process, which begins as an *ulceration surface, or as a tuberculoma, may terminate either* in, 1. resolution and cicatrization; 2, cicatrization with hypertrophic changes simulating tumor formation in the region of the ulcerated patches; 3. perforation either into (a) the free peritoneal cavity, causing fatal peritonitis, (b) agglutinative peritonitis followed by *entero enteric fistula or by* (c) encysted purulent collections in the peritoneum, which either rupture externally or into the neighboring organs (bladder, bowel, pelvis of kidney, uterus, etc) or when opened surgically, are followed by fecal fistula, 4. stricture formation after partial or complete cicatrization This stricture formation may be single or multiple, according to the number and extent of the ulcerations The modern concept differs from the old, in the conviction based on clinical, operative and cadaveric experience, that the tuberculous process in the intestines is more amenable to spontaneous cure than was formerly supposed, that the protective reactionary processes shown by the *connective tissue* in the submucosa and serosa are more effective and more frequently exhibited than was previously taught; that the ulcerative process is more latent, insidious and symptomless in its active stages and that the greatest evils which result from the intestinal localizations of the tubercle bacillus in the alimentary canal are due to protective conservative and reactionary tissue changes

Indiana Medical Journal, Indianapolis.

July

60 The Necessity of Accurate Vital Statistics C A. Carter, Indianapolis

Journal of the Medical Society of New Jersey, Orange.

July

61 *Medical Expert Testimony E J Ill, Newark
62 *When Shall the Physician Distrust His Own Judgment in Surgical Matters? M H Richardson, Boston
63 *Joint Affections Caused by Infectious Diseases W K Newton, Paterson
64 Progress of Modern Psychiatry H A. Cotton, Trenton

August

65 Hernia as Understood and Treated at Different Epochs by the Past and Present Masters of Surgery T H Mackenzie *Trenton*
66 Diagnostic Importance of Vomiting in Childhood A Stern Elizabeth.
67 Etiology and General Bacteriology of Typhoid Fever F S Hammond, Trenton
68 Account of the Sewage Plant Established at the State Tuberculosis Sanatorium. S B English, Glen Gardner, N J
69 High Frequency Electric Currents as Used in General Practice W P Glendon, Cedarville

61.– Abstracted in The Journal, Aug. 15, 1908, p. 620.

62.– Abstracted in The Journal, Aug. 15, 1908, p 620.

63.– Abstracted in The Journal, Aug. 15, 1908, p. 620

California State Journal of Medicine, San Francisco.

July

70 *Acute Otitis Media in Infancy and Childhood H. B Ellis, Los Angeles
71 *Indications for the Mastoid Operation H Hastings, Los Angeles
72 *Prophylaxis and Treatment of Acute Otitis Media W B. Stephens, San Francisco
73 Pathology of Acute Purulent Otitis Media and Indications for Operative Interference in Acute Mastoiditis C F Welty, San Francisco

70. **Otitis Media in Childhood.** Ellis discusses the anatomy and pathology of acute otitis media in infancy and childhood, and says that nearly all earaches which occur in the night last for a few hours and recur for a few hours for several days, are due to adenoid congestion. This condition is the cause of febrile attacks in infancy more frequently than any other disease except exanthemata. No age is too young for the recognition of adenoids and their removal prior to infection Ellis has operated on infants a month old, but tonsils should not be operated on at this early age. The symptomatology of adenoids in infancy differs from that in childhood. The nose of the infant is relatively small and the respiratory space very small The nasopharynx is low but deep from before backward; almost as deep as in the adult. The height increases rather rapidly for six months and then slowly up to two years The nasopharynx is extremely vascular in infancy and the lymphoid ring is well developed. Snuffles is almost diagnostic in infancy. Adenoids frequently cause enlargement of the cervical lymph glands Ellis holds the prejudice against early removal unjustifiable.

71. **Mastoid Operation.** Hastings says that the factors of *a timely operation may be determined by the following steps*: (a) a careful otoscopic examination; (b) examination of the mastoid region; (c) the history of the case and the general signs and symptoms He discusses these heads in detail and, in conclusion, says that a timely and thorough mastoid operation serves two distinct surgical purposes– it *cleans out the* mastoid, including the antrum, and in so doing efficiently drains the tympanic cavity.

72. **Otitis Media.**– Stephens enters a special plea for the recognition of the importance of acute otitis media in infancy and childhood Many *an infant* has died from meningitis caused by unrecognized acute otitis media, and many a child has grown up with a discharging ear or handicapped by impaired hearing from the same cause He calls attention, under prophylaxis, to the prominent place colds and abnormal conditions of the nasopharynx play in the *etiology of acute* otitis media, and, under treatment, emphasizes the value of early paracentesis and the necessity of asepsis at the time of the incision and in the subsequent treatment of the ear.

Wisconsin Medical Journal, Milwaukee.

July

74 *The Ideal in Medicine W E Ground Superior
75 *Purin Metabolism in Gout H C Bradley Madison
76 Diagnosis of Renal Disease and the Determination of Renal Function with the Aid of the Cystoscope A G Jenner Milwaukee

74—Abstracted in The Journal, August 8, p. 523.

75 **Purin Metabolism in Gout.**—Bradley says that there seems to be no room to doubt the fact that gout can be, and is, transmitted from one generation to another—not, of course, in the acute form, for gouty symptoms are almost unknown before the age of puberty and rarely before maturity is attained—as a well defined inclination toward the malady after the season of rapid growth and expansion has given place to the period of maturity, quiet and general prosperity. The fact that a man can so derange his own metabolism by an environment of excessive luxury as to acquire goutiness and then transfer it to his offspring seems to be of great significance Holding stoutly to the theory that acquired characteristics are not transmitted—and this, he says, is true for the great majority of diseases, diabetes, nephritis, bacterial diseases, etc—Bradley nevertheless says that in gout we see a disease acquired and transmitted to the next genera-

tion as a distinct predisposition toward that same disease. It seems safe, then, to assume that a disease so basic and fundamental in its attack is one which strikes at the very roots of that intricate system of change and interchange, oxidation, reduction, synthesis and cleavage that we are accustomed to lump together under the one broad name of metabolism. And yet there still remain some who consider that the uric acid commonly associated with joint inflammations is the cause of the disease itself; and, indeed, most of the measures for the relief of a patient in an acute attack are directed to the removal of the urate deposit, not to the correction of a condition which made the urate deposit possible.

Bradley then reviews in detail the work of the past few years in the way of cleaning up our understanding of uric acid metabolism in both normal and abnormal individuals and says that in general we can assume that in the normal individual these various ferments are actively engaged in breaking down the nuclear substances. Certain of the steps go on with tremendous rapidity. In different individuals the sum total of endogenous purin metabolism will be different because of individual idiosyncrasies, but in the same person under normal conditions it seems reasonable to suppose a rather constant nuclear metabolism, resulting in the excretion of a fairly constant amount of uric acid in the urine. This accords well with what we know of uric acid in normal urines. Granted, then, this definite mechanism for the metabolism of the cell nuclei and their peculiar proteins, it is apparent that any abnormal change in the relative or total amounts of these enzymes, or a change in the permeability of the renal mechanism, as in nephritis, will be indicated by an abnormality in the amounts of uric acid produced, destroyed and excreted in a given time. In gout we have undoubtedly such an abnormality of purin metabolism, such aspects of which have been made clear by the masterly work of Schittenhelm and Brugsch. Bradley points out that the treatment of gout, which is a derangement of metabolism, must necessarily be beyond the reach of specific drugs or rapid remedies. A faulty regimen has produced it, and only an equally persistent normal regimen can abolish it.

Montreal Medical Journal.

July

77 Hygiene and Sanitation Domestic, Municipal, National and International F Montizambert, Ottawa, Ont
78 *Spontaneous Pneumothorax or Pneumothorax in Those Apparently Healthy W. F Hamilton, Montreal
79 Opsonic Technic A H MacCordick.
80 Classification of Tumors J G Adami, Montreal
81 Later History of Sleeping Sickness. J L Todd Toronto
82 Partial Auditory and Visual Aphasia with Object Blindness Due to an Abscess of the Brain C K Russel, Montreal

78 **Spontaneous Pneumothorax.**—Hamilton reports 7 cases and finds the following common characteristics: 1 Spontaneous pneumothorax occurs in healthy individuals—mostly young men; 2, the symptoms often begin in the night or early morning, 3, there is usually no formation of fluid; 4, febrile reaction is rare, 5, the patients usually recover.

Dominion Medical Monthly, Toronto.

July

83 *Hygiene and Sanitation Domestic, Municipal, National and International F. Montizambert, Ottawa, Ont.
84 President's Address, Ontario Medical Association. I. Olmsted, Hamilton, Ont
85 Thoroughness in Abdominal Surgery. A L Smith, Montreal

83 Published in the *Montreal Medical Journal*, July, 1908.

The Cleveland Medical Journal, Cleveland.

July

86 *Obscure Fever in Infancy and Early Childhood J. L. Morse, Boston
87 Hypertrophied Faucial Tonsils and Adenoids an Etiologic Factor in Backward Children H B Ormsby, Cleveland
88 *Types of Paranoia H H. Drysdale, Cleveland
89 *Amyl and Sodium Nitrites in Pulmonary Hemorrhage. J. Placak Cleveland
90 Unusual Mastoid Operations in Children T. A. Burke, Cleveland

86 This article was published in the *Boston Medical and Surgical Journal* July 9, 1908 and was abstracted in The Journal, July 25 p 347

88 **Paranoia.**—Drysdale discusses paranoia and reports examples of paranoia religiosa, paranoia erotica, paranoia querulans, paranoia persecutoria. He adds, Paranoia is also of legal significance, and the question will arise, Should the paranoiac who knows right from wrong be held accountable for his crimes to the full extent of the law? The legal fraternity and, unfortunately, some medical men have on various occasions decided against the poor lunatic. They fail to realize that the patient lives in a world all his own, constructed by delusions which he is utterly powerless to alter. He recognizes no other law than that of heavenly origin. His crimes are the result of his hallucinations. He hears the divine voice commanding him to do his duty irrespective of the consequences, and no human agency can prevent it. In Drysdale's judgment the paranoiac with delusions of persecution and auditory hallucinations is the most dangerous individual in the community, as he is likely to become homicidal at any time. Many of the frightful tragedies that shock the public morals have been committed by persons known to be eccentric, but considered harmless.

89. **Nitrites in Hemoptysis.**—Placak has found the use of amyl and sodium nitrites in controlling hemoptysis most gratifying. They seem contraindicated in cases of erosion of a large vessel or the rupture of a small aneurism. The presence of a heart lesion seems to be no bar. The determination of the blood pressure is a valuable aid in preventing and treating hemoptysis.

Journal of Medical Research, Boston.

June

91 Transfusion of Blood in Transplantable Lymphosarcoma of *Dogs G W. Crile, Cleveland, and S P Beebe New York*
92 Mechanism of Serum Anaphylaxis and Intoxication in the Guinea pig F P Gay and E E Southard, Boston
93 Chemical Separation of Sensitizing Fraction (Anaphylactin) from Horse Serum F P Gay and H M Adler Boston
94 Vaccination of Cattle Against Tuberculosis T Smith, Boston
95 Cultivation of Parasitic Flagellata and Ciliata of Intestinal Tract E L Walker, Boston
96 Experimental Chronic Nephritis W Ophüls San Francisco

July

97 Recurrent Anaphylaxis and Repeated Intoxication in Guinea-Pigs by Means of Horse Serum F P Gay and E E. Southard, Boston
98 Relative Specificity of Anaphylaxis Id
99 *Localization of Cell and Tissue Anaphylaxis in the Guinea* Pig, with Observations on the Cause of Death in Serum Intoxication Id
100 Further Study on Anaphylaxis J F. Anderson and M J. Rosenau Washington, D C
101 Epidermal Fibrils in Classification of Malignant Growths. G McConnell St Louis
102 Apparatus of Service in Experimental Pathology F P Gay, Boston
103 Statistics of Congenital Cardiac Disease M E Abbott, Montreal
104 Study of the Eosinophilic Cell as Occurring in the Hematopoietic Organs in Diphtheria and Tuberculosis G B Foster Philadelphia
105 The Viability of Proteolytic Enzymes in Tissues C Frothingham, Jr, Boston
106 Pseudodiphtheria Bacillus Infections and Their Response to Therapeutic Inoculations A P Ohlmacher, Detroit
107 The Reaction of Hypersusceptibility as Produced by Bacterial Inoculations Id
108 Papilliferous Cysts of the Kidney. J McFarland, Philadelphia
109 Results of Chronic Parathyroiditis as Obtained by *Ligation of* the [illegible] in the Dog R L Thompson and [illegible]
110 Pathol[illegible] *Parathyroid Glandules and a* Repo[illegible] Tumor R. L Thompson and D L Harris, St Louis
111 Multiple Hernias of the Cerebrum and Cerebellum, *Due to* Intracranial Pressure. S B Wolbach, Boston
112 The Colon Aerogenes Group of Bacteria D H Bergey and S J Deehan, Philadelphia
113 Nature of Opsonins of Normal and of Immune Sera and Opsonic Effects Resulting from the Combined Action of Immune Body and Complement. C H Browning, Glasgow, Scotland
114 Clinical and Bacteriologic Study of a Case of Pyelonephritis. D Riesman and D H. Bergey, Philadelphia
115 The Forensic Value of the Musculo-Precipitin Test F. P. Gay, Boston

Northwest Medicine, Seattle, Wash.

July

116 The Value of Vision in Its Relations to *Accident* Insurance Indemnity H V Würdemann, Milwaukee, Wis
117 Sanitation and the Physician T. J. Sullivan, Seattle, Wash
118 Surgical Treatment of Gastric Ulcer F Hinman *Spokane*, Wash
119 *Head Injuries S V R Hooker, Seattle, Wash

119. **Head Injuries.**—Hooker calls attention to the following important facts: 1. Concussion of the brain is not a cause of death. 2. Pressure symptoms after injury to the head should mean operation. 3. Simple unconsciousness lasting *more than thirty-six hours after such injury means similar* treatment. 4. Such operations call for asepsis and speed more than almost any *other class of operations.* 5. Careful diagnosis and prognosis are necessary. Guard the latter by stating the possibility of more or less laceration of brain tissue.

Journal of the South Carolina Medical Association, Greenville.

July.

120 Ocular Tuberculin Reaction. E. W. Carpenter, Greenville.
121 Acute Bowel Obstruction. A. B. Knowlton, Columbia.
122 Ulcers. J. L. Sanders, Anderson.
123 Abortion and Its Treatment. W. H. Lawton, Vance.
124 Is Medicolegal Legislation Needed in South Carolina? W. Cheyne, Sumter.

The Laryngoscope, St. Louis.

July

125 Essentials of Voice Production W. Mills, Montreal, Canada.
126 Drainage Mechanism of Normal Accessory Sinuses S. Yankauer, New York.
127 Total Deafness Following Infectious Diseases. L. J. Goldbach, Baltimore.
128 Intracranial Complications of Suppurative Otitis Media. J. J. Thompson, New York.
129 Case of Extradural Abscess. C. P. Jones, Newport News, Va.
130 Three Cases of Laryngeal Growth Removed by Direct Laryngoscopy. J. McCoy, New York.
131 Congenital Diaphragm of the Larynx. G. Kiaer, Copenhagen, Denmark.
132 Congenital Detachment of Faucial Pillars and Isolation of Palato-Glossus Muscle. P. Fridenberg, New York.
133 Three Unusual Cases of Nasal Disease. G. C Hall, Louisville, Ky.

Memphis Medical Monthly.

July.

134 Medical Evolution. H. Hawkins, Jackson, Tenn
135 Pathogenesis of Pernicious Malaria. W. H. Deaderick, Marianna, Ark.
136 Bier's Stasis Hyperemia in Acute Inflammations J. H. E. Rosamond, Memphis.
137 Two Cases of Accidental Antepartum Hemorrhage O S. McCown, Memphis.
138 Administration of Quinin by Inunctions. G. E Petty, Memphis.
139 Plastic Surgery of the Face. J. E. Johnson, Memphis
140 Impressions from the Fifty-ninth Meeting of the American Medical Association. O. S McCown, Memphis.

Albany Medical Annals, Albany.

July.

141 Character of the State Board Examinations and the Competency of State Medical Examining Boards. W. G. Tucker, Albany.
142 The Guest or Personal Experiences of a Patient in a Hospital Told by Herself (Continued).

Denver Medical Times, Denver.

July.

143 Reminiscences. J Elsner, Denver.
144 Influenza. L. P. Barbour, Rocky Ford, Colo.
145 Travel Observations. L. R. Hopkins, Denver.

Utah Medical Journal, Provo.

July.

146 Relations That Should Exist Between the Medical Profession and the General Public. H. D. Niles, Salt Lake City.
147 *The Teeth—Deformities:* Causes, Prevention and Treatment. O. K. Hansen, Provo.

American Practitioner and News, Louisville.

July.

148 Life Insurance Medical Examination. W. E. Grant, Louisville.
149 Continuous Rectal Irrigation. G. S. Hanes, Louisville.
150 Pulmonary Tuberculosis. J. W. Irwin, Louisville.

Journal of Experimental Medicine, New York.

July.

151 Pathologic Anatomy of Hydrazine Poisoning H. G. Wells, Chicago.
152 Melanoma of Vater's Diverticulum and Lower Portion of Common Bile Duct Causing Complete Obstruction. C. W. Duval, Montreal, Canada.
153 Biologic Study of the Cerebrospinal Fluid in Anterior Poliomyelitis. M. Wollstein, New York.
154 Pulse Pressure as an Index of the Systolic Output. P. M. Dawson and L. W. Gorham, Baltimore.
155 Return of Function in the Central Nervous System After Temporary Cerebral Anemia. F. H. Pike, C. C. Guthrie and G. N. Stewart, Chicago.
156 Ratio Between Heart-Weight and Body-Weight in Various Animals. D. R. Joseph, New York.
157 Production of Agglutinins in the Animal Body by Inoculation of Substances Other Than Products of Bacterial Origin. K. R. Collins, New York.
158 Differential Counts of Cells in the Lymph of the Dog: Their *Bearing on Problems in Hematology.* F. P. Rous, Ann Arbor.
159 Obstructive Hydrocephalus Following Cerebrospinal Meningitis, with Intraventricular Injection of Antimeningitis Serum (Flexner). H. Cushing and F. J. Sladen, Baltimore.
160 Glycothionic Acid. P. A. Levene and W. A. Jacobs, New York.
161 Human Spleen as a Hematoplastic Organ, as Exemplified in a Case of Splenomegaly with Sclerosis of Bone Marrow. J. L. Donhauser, Philadelphia.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London.

August 8.

1 *Intrathoracic New Growths. T. R. Glynn.
2 Human and Cattle Tuberculosis: *Investigations of 97 Norwegian Farms.* B. Overland.
3 *Treatment of Appendix Abscess. A. W. Cuff.
4 Use of Selected Lactic Acid Bacilli and Soured Milk in Treatment of Some Forms of Chronic Ill Health. G. Herschell.
5 Case of Diphtheria and Impetigo Contagiosa in a *Child.* T. P. Puddicombe.
6 Experiments as to the Constancy of the Carbohydrate Reactions of the Streptococci. J. Ritchie.
7 *Organism Discovered in a Case of Epidemic Diarrhea. R. S. Williams, J. Orr, H. L. Murray, C. Rundle and A. E. Williams.

1. **Intrathoracic New Growths.**—Glynn bases his observations on 23 cases of intrathoracic growths, in which postmortem examinations were held. In sixteen cases the tracheobronchial glands were the seat of the new growth. He describes the arrangement of these glands in groups, and says that it is evident that a malignant infection originating in any gland of the tracheobronchial system is likely to extend from group to group. Malignant growths in the esophagus, vertebræ, breast or sternum may cause secondary disease of the glands or may invade the mediastinum, the pleura or lungs by continuity. Glynn discusses the various forms of new growth that may affect the mediastinum. Pleuritis effusion frequently complicates intrathoracic malignant growths. Little or nothing can be said of the cause of the growth. The symptoms of growth in or hypertrophy of the bronchial glands are due largely to pressure on or invasion of nerves, bronchi, vessels, etc. Glynn can find no record in his cases of the "aching constrictive pain" referred to the upper part of the chest behind the sternum, which Rendu says generally precedes other symptoms. Dyspnea is frequently present and was a prominent symptom in two of his cases of cancer of the lungs. Hoarseness is common, from pressure on the pneumogastric or recurrent laryngeal nerve. Cough is present at some period. The quantity and character of the expectoration may vary exceedingly, being dry, streaked with blood, or purulent. Hemoptysis may be present in malignant disease and more or less pyrexia is to be expected in Hodgkin's disease. Constriction of a main bronchus from pressure is likely to give rise to characteristic signs. These he discusses at length. The diagnosis of mediastinal tumor is often difficult, and the prognosis is necessarily unfavorable, though he has noted two cases, presumably of mediastinal growth, in which the course was not unfavorable. Arsenic in increasing doses is indicated in enlarged mediastinal glands with Hodgkin's disease; and potassium iodid is indicated if syphilis is present. Otherwise, the treatment is palliative. Hypodermic injection of atropin may relieve pain.

3. **Appendix Abscess.**—Cuff suggests that the operative treatment of appendix abscess should conform as much as possible to the following propositions: The abdominal route should be chosen in all cases. The incision should be so placed as to allow of the easiest access to the origin of the mischief, and it should be so large and so capable of extension that any conditions likely to be found may be dealt with easily and thoroughly. Ease of manipulation means quickness of operation, and this quickness is essential in dealing with these half-poisoned patients. A second operation should not be done if it can possibly be avoided, hence the appendix

should always be removed at the same time. There should be as little mutilation as is compatible with thoroughness, two incisions not being made when one properly placed at first will do all that is necessary. Drainage tubes, both in size and in number, should be reduced to a minimum. The abdomen should not present the appearance of a target stuck full of arrows, as in the illustrations of some suggested procedures. It should always be borne in mind that tubes leave very weak places in the scar, as well as being liable to injure the peritoneum, and so predispose to intestinal obstruction from the formation of adhesions with the bowels. Injury to the nerve supply and to muscular fibers should be avoided when possible, and the wound and its resulting scar should be placed in as strong a part of the abdominal wall as is compatible with the foregoing requirements.

7. **Epidemic Diarrhea.**—Williams, Orr and others, after examining the feces in the cases of epidemic diarrhea in Liverpool City Hospital, report the constant finding of an organism closely related to the *B. paratyphoid* group which produces diarrhea in young puppies. Its relation to epidemic diarrhea is the subject of investigation at present.

British Medical Journal, London.

August 8.

8 *Treatment of Some of the Severer Forms of Headache. W. Harris.
9 *Value of Diminished Cardiac Dulness in Diagnosis of Cancer. W. Gordon.
10 Case of Streptococcic Puerperal Infection Treated with a Vaccine. G. W. Crowe and W. H. Wynn.
11 *Dangers of Calmette's Ocular Reaction. T. H. Butler.
12 Training of Teachers in Personal and School Hygiene. C. C. Douglas.
13 *Influence of Alcohol in the Services. A. M. Davies.
14 Feeding of Soldiers in Barracks, in Hospitals, and in War. R. J. Blackham.
15 Alcohol as a Cause of Inefficiency. G. S. Crawford.
16 Importance of Learning a Trade in the Army. W. Y Sinclair.
17 Dust and Disease. E. Owen.

8. **Headache.**—Harris, for practical purposes, classifies headaches and discusses them as follows:

- A. Superficial.
    - 1. Diseases of the Brain Coverings:
        - (a) Scalp—e. g., cellulitis; weight of hat or mass of hair.
        - (b) Pericranium—e. g., rheumatic
        - (c) Bone—e. g., tuberculous or syphilitic caries.
    - 2. Reflex Visceral Neuralgias of Scalp: Ocular, dental, pulmonary, cardiac, gastric, etc.
- B. Deep.
    - 3. Reflex Cortical Neuralgia: Visual "Academy" headache: thunderstorm: neurasthenic.
    - 4. Toxemic: Constipation and sluggish liver: influenza and other fevers; foul air: alcohol: ether.
    - 5. Increased Intracranial Pressure: Cerebral tumor and abscess: acute encephalitis: hydrocephalus; cerebral hemorrhage: cerebral edema in chlorosis and arteriosclerosis: sinus thrombosis: meningitis: tight neckband: migraine: epilepsy.

He points out how unsuccessful we are in relieving true migraine by ordinary antineuralgic remedies. He believes this to be because the pain in migraine is produced by an increase of the intracranial pressure brought about in the first instance by arterial dilatation of certain cortical and meningeal areas—a vascular dilatation which succeeds the primary vasomotor constriction which surely occurs in this disease. He believes that the operation of trephining, which has been done several times for neurasthenic headaches, would be justified also in those severe cases of frequently recurrent migraine in which the unfortunate patient is prostrated for one or more days every week or so.

9. **Cardiac Dulness and Cancer.**—Gordon refers to a previous paper in which he described a diminution of the cardiac dulness in the recumbent posture occurring in some cases of cancer, and suggested its probable value in diagnosis. He now states that further experience has justified this view, and tabulates, with brief reports, 103 cases, all of such a nature as to raise in greater or less degree the suspicion of cancer, while in all of them the reduction of the dulness or the absence of reduction could not be fairly accounted for by ordinary causes. He defines diminished cardiac dulness as follows: With a patient completely recumbent—that is essential—a normal cardiac dulness generally begins at about the third costal cartilage, has its right limit about the mid-sternum, and measures about three inches across at the level of the fifth costal cartilage; but in the condition discussed here the dulness begins above about the fourth costal cartilage, has its right limit a little to the left of the left sternal border, and measures across, at the level of the fifth costal cartilage, less than two inches, or in many cases less than one inch; sometimes there is no cardiac dulness at all. With this diminution of obliteration of dulness are often associated a small feeble low-tension pulse and weak heart sounds. He divides his cases into three classes: Class 1 (38 cases) included cases in which a presumable cancer was naturally accessible to direct examination or was examined at operation or postmortem: diminished cardiac dulness was shown in 34, or 89 per cent. Class 2 (19 cases) consisted of cases which all ended fatally, the downward course according with the diagnosis of cancer: diminished cardiac dulness was present in 17, or almost 90 per cent. Class 3 (46 cases) consisted of cases which for various reasons can not be supposed to have been cancerous; diminished cardiac dulness appeared in only 11, or 24 per cent. An important question is as to the stage in the development of cancer at which diminished dulness appears. Gordon considers the time hardly ripe for explanation of this phenomenon, but suggests tentatively that in cancer the heart, like other muscles, may become more flaccid, or that the lungs, like the abdominal skin, may lose some elasticity, and so give rise to a spurious emphysema: or finally, that in many cases of cancer the heart is known to become much reduced in size.

11. **Ocular Tuberculin Reaction.**—Butler reported in May, 1908, conclusions based on certain cases to the effect that the reaction, though sometimes obtained in the non-tuberculous, and sometimes absent in the certain tuberculous cases, was at any rate devoid of danger to the healthy eye. He now reports, however, that three of the patients on whose cases he based this view, have done badly. In one case, a typical tuberculous process was set up in a perfectly normal eye and the central nebula will considerably reduce the visual acuity of the eye. He has therefore abandoned the method, and considering that it is often deceptive and may do great damage he holds its use unjustifiable.

13. This article is commented on editorially.

Medical Press and Circular London.

August 5.

18 Various Methods Employed in Serodiagnosis of Syphilis. Professor Fornet.
19 *Vermin as Disease Carriers. L. W. Sambon.
20 Artificial Respiration. J. P. C. Kirkpatrick.
21 Food Inspection at Ports of Entry. W. F. Dearden.
22 Baths of Schinznach, Switzerland. H. Sewill.

19. **Vermin as Disease Carriers.**—Sambon, after referring to the fact that both mammalian and avian tuberculosis are transmissible to man, states that he has recently investigated two severe epizootics among birds, and has found the pneumonia diplococcus exactly like that in the human being. The facts have convinced him more than ever of the necessity for the study of epizootology, with a view to the elucidation of the epidemiology of our own diseases and scourges. Fatal enteritis may cause deadly epidemics in man. Prophylaxis is futile unless every single factor in the epidemiology of each disease is considered. Pigeons probably play a disseminating rôle in diphtheria, and he has a strong suspicion also of the sparrow, for in it he has found both tuberculosis and diphtheria. He had not time to discuss the part played by the dog and the cat in the spread of disease. He regards the mouse as one of the deadliest of household pests. The majority of diseases known to be insect-borne are tropical, because the diseases of the tropics have been investigated by men unbiased by preconceived ideas. Sambon declares that in the matter of prophylaxis we of the present day are pygmies compared with the ancients. He quotes a number of instances from Roman and Greek his-

tory, showing the measures of precaution adopted and the accuracy with which the onus of the spread of disease was placed on certain animals, in classical times.

Clinical Journal, London.

August 6

23 *Treatment of Tapeworm. F. de H. Hall.
24 Injuries to the Head. A. A. Bowlby.
25 Constipation. A. F. Hertz.

23. **Tapeworm.**—Hall describes the indications in the treatment of tapeworm and says that they are all met by the following plan, originally described by the late Dr. Leslie Ogilvie, which he has found to answer in every case in which he has tried it. For three days previous to the administration of the male fern the patient should be kept entirely on a liquid diet, a pint and a half of milk and a like quantity of beef tea answer very well. To promote a free action of the bowels and to favor the removal of mucus, twenty grains (gram 1.30) of sodium bicarbonate, a dram of sodium sulphate, and twenty minims (gram 1.12) of spirit of chloroform in an ounce (gram 30.) of peppermint water should be taken three times a day. The night before the male fern is given the patient should have half an ounce (gram 15.) of magnesium sulphate, with a dram of tincture of jalap, and twenty minims (gram 1.12) of the compound tincture of chloroform in an ounce (gram 30.) of water. This is repeated next morning at 7 o'clock if the previous dose has not operated. At 8 a. m. a dram (gram 4.0) of the liquid extract of male fern, made up in a mixture with a dram (gram 4.0) each of mucilage of tragacanth and syrup of ginger in an ounce of chloroform water. At 9 a. m. this dose should be repeated. At 11 a. m. half an ounce (gram 15.) of castor oil with a dram (gram 4.0) of tincture of jalap should be given and if the bowels do not act within an hour an enema of a pint and a half or two pints of soapy water should be administered. The motions should be carefully examined to find the head and if the above treatment has been faithfully carried out it may be sought for with confidence. It is desirable to keep the patient in bed for two or three hours after the bowels have acted, as the male fern may cause faintness.

British Journal of Children's Diseases, London.

July

26 *Pneumonia in Childhood. T. R. Whipham.
27 Case of Pneumococcal Peritonitis with an Unusual Complication. H. S. Clogg.
28 *Edema Persisting since Birth. G. A. Sutherland.*

26. **Pneumonia in Childhood.**—Whipham states that pneumonia is one of the common affections of childhood. When a child has pneumonia, it is a common error to imagine that it must of necessity have lobular or bronchopneumonia. Such is by no means always the case. The lobar variety of pneumonia is much more frequent in childhood than is often supposed. The diagnosis between lobar pneumonia and bronchopneumonia is often a matter of some little difficulty. The chief points of distinction to be borne in mind are: 1, Lobar pneumonia is almost always primary, while bronchopneumonia is frequently secondary; 2, its onset is sudden and the symptoms well marked, whereas bronchopneumonia begins insidiously as a rule; 3, the temperature in lobar pneumonia tends to be more uniformly high and to end by crisis, whereas in the other form the course of the fever is prolonged and irregular, and rarely ends abruptly; 4, lobar pneumonia usually affects a localized area of one lung at any rate to begin with, the signs being limited to that area and leaving the rest of the lung free, while bronchopneumonia is bilateral and more extensive; 5, bronchopneumonia tends to occur at a slightly earlier age than lobar pneumonia. In lobar pneumonia the male sex is the one that is chiefly affected in childhood, as in adult life, and the disease may occur at any age. In Whipham's series the right lung was affected in 37 cases, or 56.9 per cent., the left in 23, or 35.3 per cent., and both lungs in 5 cases, or 7.8 per cent. It is of general knowledge that the right lung is more often affected than the left, but in these cases the incidence on that side was rather more frequent than appears usually to be the case. The onset of lobar pneumonia is almost invariably sudden. In Whipham's series the disease terminated in a definite crisis in 44 out of the 54 cases, or in 81.4 per cent., in which the termination of the pneumonic process could be accurately determined. In the majority of cases, the crisis took place, between the fifth and tenth days, during which period it occurred in 30 instances, or 68.1 per cent. A few cases terminated by crisis as early as the third or fourth day. The temperature in children often tends to vary considerably between wide extremes, a high temperature alternating with a normal or subnormal one. In the series of 65 cases 11 patients died, giving a total mortality of 16.9 per cent.

Bronchopneumonia in childhood is more particularly a disease of early infancy. In Whipham's 85 cases the sexes were affected equally. His series consisted of 33 primary and 52 secondary cases. The lesions of bronchopneumonia are to be found, as a rule, simultaneously in both lungs. In the greater number of cases the disease begins insidiously, and this is especially the case in the secondary form. Speaking generally, the temperature in bronchopenumonia is not so high as in the lobar form and is less regular, the remittent or intermittent type being more or less characteristic. The duration of the fever was found to vary considerably. The temperature subsides gradually in nearly all cases—in other words, a crisis seldom occurs. Whipham had a total of 39 deaths in his 85 cases, or a mortality of 45.9 per cent. Bronchopneumonia complicating measles has a bad prognosis, and is closely followed by that associated with whooping cough and a previous bronchitis. During the first two years of life the mortality is high. A sudden onset of the disease in primary cases appears to be of unfavorable import. The temperature also affords some indication of the virulence of the infection, hectic temperature with high maxima having an especially bad prognosis. Such cases are generally due either to a streptococcal or a mixed infection.

Australasian Medical Gazette, Sydney.

June 20

29 Present Views of the Nature of Tuberculosis and Its Treatment by the Physician. C. Reissmann.
30 Impacted Shoulder—Tonic Contraction of the Uterus—Removal of Uterus and Contents by Panhysterectomy. R. Worrall.
31 Uses of Bozzi's Dilator in the Artificial Dilatation of the Os Uteri in Labor. J. L. T. Isbister.
32 Antepartum and Postpartum Hemorrhage. F. Barrington.
33 *Disturbances of Menstruation. W. T. Chenhall.
34 *Extensive Syphilitic Necrosis of the Skull, Illustrating an Easy Way for Removing Such Sequestra. *T. Fiaschi.*

33. **Menstrual Disturbances.**—Chenhall discusses amenorrhea, vicarious menstruation, imperfect development, menorrhagia and metrorrhagia. He says:

"Since sterility and dysmenorrhea are due to various causes, treatment must necessarily be varied in character. In the absence of painful menstruation, operation is only permissible for sterility when some morbid hyperemia or congestion of the mucosa prevents proper engrafting of the ovum. In absolute or relative amenorrhea with sterility it is justifiable to dilate the uterine canal for the purpose of applying the negative pole of the galvanic current to restore menstruation. Proof of the husband's potentiality should precede operation on the wife. The gynecologist's duty is to establish normal menstruation and potential fertility, hence it is useless and unwarrantable to establish hopes of fertility by cervical dilatation when tubal occlusion renders conception impossible. Medicinal treatment is irrational when alone directed toward relief of pain. Stimulants, anodynes and narcotics damage the constitution, inculcate vicious habit and introspection, and lead, ultimately, to complete moral perversion and degradation." In regard to versions and flexions he says that unwarranted prejudice against pessaries now exists.

34. **Sequestra in Syphilitic Necrosis.**—Fiaschi reports a case of a man, aged 46, with a large piece of necrosed bone in the forehead. He describes its removal, and on the basis of this experience he urges surgeons who may meet with similar cases not to trouble to trephine or chisel through the peripheral thickened and eburnated healthy bone, but to attack boldly, with a common saw, the necrosed bone, following four or five lines which will include the chief area of it, then

to introduce one or two thin steel chisels through the saw lines and prize up the sequestrum. The fringes of the necrosed bone adherent to the sound will be easily detached from inside outward, either with rongeur or w sequestrum forceps.

Intercolonial Medical Journal of Australasia, Melbourne.

June 20.

35 Surgical Treatment of Exophthalmic Goiter. T. P. Dunhill
36 Urinary Infection in Infants. H. D. Stephens
37 Plea of Insanity, Monomania, or Partial Insanity W Beattie Smith.
38 Hypertrichosis and Port-Wine Marks, Involving Both Sides of the Face, Removed by X-Rays T. G Beckett

Annales de Dermatologie et de Syphiligraphie, Paris.

July, IX, No. 7, pp. 387-464

39 Pulverized Metallic Zinc in Treatment of Ulceration on the Genitals. L Kopytowski.
40 Septicemia from the *B. Pyocyaneus*, and True Chronic Bullous Pemphigus. G. Petges and H. Bichelonne
41 Histologic Modifications Engendered in Cutaneous Affections by an Intercurrent Febrile Infection. (Dermatite polymorphe douloureuse et pneumonie.) J. Pellier

Archives Générales de Chirurgie, Paris.

July 25, II, No. 7, pp 1-144

42 *Condition of the Glands in Cancer of Testicle R Grégoire
43 *Hydatid Cysts of the Spleen. (Kystes hydatiques de la rate) A. Martin.
44 *Two Cases of Milky Ascites. (Ascite chyliforme) Mauclaire

42. **The Glands in Cancer of the Testicle.**—Grégoire reports three cases and reviews five others—this material showing that it is impossible to determine the condition of the glands with cancer of the testicle in any way except by an exploratory operation. Neither the duration of the affection, the size of the growth or palpation gives any reliable data in respect to the state of the glands. They are liable to be extensively involved early. Simple castration is not rational treatment in these cases. Three of the patients in the cases mentioned were in good health when last seen some time after the operation.

43. **Hydatid Cysts of the Spleen.**—Martin adds 6 unreported cases to the 83 he had previously collected, and reviews the origin, pathologic anatomy and the symptoms. The latter differ as the cyst develops up or down, and toward the front or rear. Simple puncture is unreliable and exposes to severe immediate or later disturbances. Simple extirpation should be done only in case the cyst is pedunculated and suppurating. Splenectomy should be the rule in case the spleen presents multiple cysts, not suppurating. The only drawback is the seriousness of the operation. If the cyst is suppurating and adherent, the only treatment is by incision, suturing the lips of the cyst to the lips of the wound—marsupialization—and drainage.

44. **Milky Ascites.**—Mauclaire reports a case of chyliform ascites with carcinomatosis of the peritoneum, and also a case in which the chyliform ascites accompanied tuberculous peritonitis. He reviews the literature on the subject, tabulating the various causes for this condition.

Bulletin de l'Académie de Médecine, Paris.

July 21, LXXII, No 29, pp. 78-103

45 Various Routes of Secondary Propagation of the Treponema Pallidum. Their Influence on the Symptoms and Necessity for Arresting the Treponema *en route* (Voies de propagation secondaire du Treponema pallidum et la possibilite d'y mettre obstacle par un traitement local atoxylien.) H Hallopeau

July 28, No 30, pp 105-162

46 *Septicemic Phthisis L Landouzy and L Laederich
47 Immunization by Revaccinations (L'immunite et l'immunisation vaccinales dans leurs rapports avec la voie de pénetration du virus) Kelsch, Camus and Tanon.

46. See No. 48.

Presse Médicale, Paris.

July 29, XVI, No. 61, pp. 481-488.

48 *Subacute Form of Tuberculous Septicemia. L. Landouzy and L Laederich.
49 *Practical Value of Percutaneous Tuberculin Reaction E Moro.

August 1, No 62, pp. 489-496

50 General Principles Regulating the Blood Pressure. (Pression sanguine et ses variations à l'etat normal) G Weiss.
51 Internal Secretions and Psychoses. Laignel Lavastine.

August 15, No. 63, pp. 497-512.

52 *Simple Mitral Stenosis and Dwarf Growth. (Rétrécissement mitral pur et nanisme) M. Labbe
53 *Viscosity of Blood and Iodin. (Viscosité du sang et iode.) P Boveri.
54 *Measles and Red Light. (Rougeole et la lumière rouge.) F Simionescu.

48. **Septicemic Form of Acute Miliary Tuberculosis.**—Landouzy and Laederich give an illustrated description of a case of acute miliary tuberculosis assuming the form of a subacute septicemia. The toxi-infection ran its course with a series of exacerbations, each one causing local reactions of variable location and type. Successively and alternately manifestations on the part of the joints, skin, heart, pericardium, endocardium, lungs and pleura predominated in the clinical picture; but the general symptoms, the continuous fever, emaciation and wasting testified to the toxic impregnation of the organism. The patient was a groom of 16, and he died in less than three months of the toxic infection, although *scarcely "tuberculous" in the sense of pathologic anatomy* Except for one small miliary tubercle in the lung, none of the tissues had reacted to the bacillary toxi-infection except with the manifestations of ordinary non specific inflammation. The *authors think that this and similar cases which they have* observed should be regarded as a new type of acute miliary tuberculosis distinct from the meningeal, the pulmonary and the typhoid forms They emphasize the way in which the field of tuberculous infection is being enlarged to include many affections involving the pleura, the heart, joints, skin, etc. In the case described, the joint affection, the polymorphous erythema and the endopericarditis were accompanied by tender, recurring lumps on the elbows and skull, vanishing completely in less than a month.

49. **Percutaneous Tuberculin Reaction.**—Moro here recapitulates his work in this line. He uses a salve containing six parts of Koch's old tuberculin to five parts of lanolin. 'A piece about the size of a pea is lightly rubbed for half a minute on the skin of the abdomen or chest, with care not to injure the skin. The reaction, if positive, occurs on the surface of the skin, as a folliculitis—the "percutaneous reaction;" in 24 or 48 hours from one to ten pale papules appear on the surface. In case of a negative reaction the skin shows no change.

52. **Mitral Stenosis and Dwarf Growth.**—Labbé reports a case in a young man of this combination. He discusses the question from various points of view, and is inclined to believe that inherited syphilis and tuberculosis were the primary cause of both the valvular lesion and the defective growth.

53. **Viscosity of the Blood and Iodin.**—Boveri has been studying the subject on twelve patients with hypertension from various causes, and his findings show that the blood becomes more viscous with arteriosclerosis and advancing years. Treatment with iodids renders the blood more fluid in inverse proportion to the severity of the case. This explains one of the causes of the favorable action of iodin in cardiovascular affections. When one reflects how the urine passes through the long and tortuous renal tubules, and other secretions through capillary systems, while the lymph and the blood have to circulate through extremely delicate capillaries, it is easy to see what an important factor for the proper nourishment of the tissues, etc, is the more or less viscous condition of the blood. It may be a determining element in the complex mechanisms of circulation and excretion.

54. **Measles and Red Light.**—This communication from Bucharest extols the advantages of keeping patients with measles under the influence of red light. It relates two cases showing the different course of the disease in two brothers, one of whom had a room with red walls and curtains. The influence of the red light seems to abort the infection, the measles germ and its toxin apparently losing their pathogenic properties under the action of the red light.

Archiv fur Kinderheilkunde, Stuttgart.

XLVIII, Nos. 3-4, pp 161-320 Last indexed July 4, p 82

55 *Increase of Proportion of Fat in Breast Milk During Ingestion of Fat. (Fettvermehrung der Frauenmilch durch Fettzufuhr.) L Moll.

56 Importance of Different Proportions of Fat in Breast Milk in Respect to the Thriving of the Infant. (Bedeutung der quantitativen Fettunterschiede fur das Gedeihen des Brustkindes.) Id.
57 *Tendency to Spasm in Children and Lime Metabolism. (Spasmophilie und Calcium.) H. Risel.
58 Emphysema in Skin as Accident from *Intubation*. (*Hautemphysem als Intubationstrauma.*) F. Hammes.
59 *Scarlatinal Joint Affections. (Scharlachrheumatismus.) G. F. Wladimiroff.
60 *Bronchial Asthma in Children. J. S. Aikawin.

55. **Influence of Ingestion of Fat on Breast Milk.**—Moll found that the amount of fat in the milk of a thin wet nurse could be increased to twice its former proportions by having her eat bacon freely twice a day. The child she was nursing thrived notably on the fatter milk, the former dyspeptic stools becoming normal. Experiments with other wet nurses confirmed the benefit from allowing plenty of bacon when a child is not thriving on a fat poor breast milk. Certain facts observed seem to suggest that the milk fat of different wet nurses is not identical, which compels caution in changing. It may be advisable to use a milk sometimes containing still less fat for a time.

57. **Calcium and Spasmophilia.**—Risel has examined twenty-two children with more or less signs of spasmophilia from nutritional disturbances or rachitis. He added to their milk or gruel a 3 or 5 per cent. solution of calcium acetate. The results showed very little influence from the calcium on the tendency to convulsions. The electric excitability of the peripheral nerves was not increased, but rather diminished as also the spasmophilic tendency.

59. **Scarlatinal Joint Affections.**—Wladimiroff's experience has shown that neuritis occurs after many acute infectious diseases and he describes some cases in which this seems to be the explanation of the scarlatinal rheumatism observed. The complication may assume the form of a serous synovitis or of a neuritis. In the latter the joint does not usually swell although there may be edema, but the pain may extend through the entire limb and be variable in character and intensity. If the vagus and phrenic nerves are affected in the same way, and if anatomic changes are found in scarlet fever such as he has encountered in diphtheria, this will throw light on the early fatal cases of scarlet fever. He adds that the anatomic changes in the nerves in scarlet fever and the nervous complications should be more carefully studied. The salicylates proved useful in his experience with this scarlatinal polyneuritis. In one case ataxia followed scarlet fever.

60. **Bronchial Asthma in Children.**—Aikawin reports 10 cases in children from 17 months to 12 years old and reviews the literature. He believes that asthma may occur as an independent, essential affection and as a symptomatic affection from reflex action. Catarrhal manifestations were pronounced in all his cases, only two of which seemed to be of the symptomatic form.

Beitrage zur Klinik der Tuberkulose, Wurzburg.

X, No. 1, pp. 1-130. Last indexed June 20, p. 2114.

61 Opsonic Index and Tuberculosis. K. Turban and G. Baer.
62 *New Points of View in Tuberculin Therapy. (Neue Gesichtspunkte in der Tuberkulintherapie.) D. Rothschild.
63 Concrements in the Lungs and Treatment with Silicic Acid. (*Lungensteine und Kieselsaurebehandlung.*) *H. Gerhartz* and A. Strigel.
64 *Tuberculin Treatment of Pulmonary Tuberculosis from Clinical Standpoint. (Tuberkulinanwendung in der Lungentuberkulose vom klinischen Standpunkte.) K. Dluski.
65 *Roentgen-Ray Inspection of Thorax in Dyspneic Patients. (Zur Rontenographie des Thorax dyspnoischer Patienten bei Atemstillstand.) A. Rzewuski.

62. **Autotuberculin and Opsonic Index.**—Rothschild lays down various rules for improving the technic of tuberculin treatment of pulmonary tuberculosis. The correct dose of tuberculin seems to be, he says, the smallest dose which causes a pronounced rise in the opsonin content of the blood. The opsonic index is an exact guide for tuberculin treatment but it gives contradictory findings sometimes. It is possible, he declares, to eliminate the causes for these discrepancies by using as the tuberculin an emulsion of tubercle bacilli derived from the patient's own sputum, urine or any disease product of the patient himself. The phagocytosis must be tested with the patient's own bacilli to insure absolutely reliable findings. The logical consequence is that each patient should have his own individual tuberculin—a bacilli emulsion made with his own bacilli. This autotuberculin is specific, he asserts, in the truest sense of the term, and the opsonic index conforms to it constantly. He has applied this autotuberculin in three cases and was impressed with the superior curative results obtained with this 'ideal form of tuberculin treatment.' He never surpassed the dose of 1/500 mg. but each inoculation was followed by a brief negative phase of the opsonic index succeeded by a pronounced and prolonged positive phase. When the opsonin content of the serum begins to decline another inoculation is made—the intervals ranging from two to four days. These small doses always displayed a distinct influence on the opsonic index, and induced marked improvement in the subjective and objective condition. He adds that in cases of mixed infection vaccines should be used against the other infectious germs, to supplement the tuberculin treatment. For this also he recommends inoculation of killed cultures of germs cultivated from the sputum or pus of the patient in question. Autotuberculin treatment under the control of the opsonic index promises to solve the question as to the dosage and intervals of the injections. Of course artificial inoculation of an emulsion of tubercle bacilli is necessary only when the opsonic index is too low. In certain cases of tuberculosis the opsonic index is very high, and he agrees with Wright that in these cases there is a continuous or constantly repeated autoinoculation of the blood with bacilli and bacillary products from the vicinity of the focus. This keeps the opsonic index high. In all such cases artificial tuberculinization is purposeless. On the contrary every effort should be made to prevent too energetic autotuberculinization, protecting the patient by complete bed rest or restriction of unnecessary movements. If the bacillary toxins overwhelm the organism too much, the changes in the opsonic index are accompanied by severe subjective disturbances. The fever curve has no direct relation to the opsonin content of the blood, yet the maximal temperature after too large doses of tuberculin seems to correspond always with the lowest point of the negative phase of the opsonin curve following the inoculation. In cases in which it is impossible to obtain any bacilli from the patients he uses an emulsion of mixed bacilli—a universal tuberculin—which contains as many different kinds of acid-proof bacilli as possible, both the bovine and human types. This does not supply an absolutely specific autotuberculin, but comes nearer to it than any of the ordinary preparations now in use. The simultaneous inoculation of a number of varieties enhances the probability that one of them is of the patient's own type. The endogenous autotuberculin accumulated in the periphery of the disease focus can be forced into the blood by systematic graduated movements, and thus, by artificial means the opsonin content of the blood can be increased. In this way it is possible to utilize therapeutically the endogenous autotuberculinization by a rational succession of periods of rest and work. He applies the term exogenous autotuberculin to that produced outside of the body by an emulsion of the patient's own bacilli.

64. **Tuberculin Treatment of Pulmonary Tuberculosis from the Clinical Standpoint.**—Nearly a hundred pages are devoted by Dluski to a review of the clinical results of tuberculin treatment of tuberculosis in two dozen different sanatoria. This gives an oversight over more than 1,743 cases of tuberculosis under tuberculin treatment, and nearly 8,000 cases in which tuberculin was injected for diagnostic purposes. Fully 229 articles on the subject have been consulted, and he tries to reconcile the conflicting views of those who are warm advocates of tuberculin treatment and those prejudiced against it. He considers individually the results with the different varieties of tuberculin—eight in all. The article is a comprehensive summary of what has been done in this line of specific treatment of tuberculosis during the last seventeen years. Several tables give an oversight of the details of the technic followed in each sanatorium. His final conclusions are that the combination of hygienic and dietetic measures with tuberculin gives no better results, on the whole, than the hygienic

dietetic measures alone. Science has not yet formulated laws for specific treatment with tuberculin. Instead of this, we have merely the personal impressions of single physicians either for or against tuberculin treatment. The clinic teaches that the tuberculins may have a very favorable action in very severe cases, but, on the other hand, they may develop injurious and even dangerous action in mild cases. Specific treatment should be applied only with extreme caution, he warns. The safest technic, he is convinced, is that of Hammer and Sahli, as this seems to avoid all possible complications. At present, however, he declares that chaos still reigns in regard to the application of tuberculins in therapeutics.

65. **Roentgen Ray Inspection of Thorax of Dyspneic Patients.**—Rzewuski has found it possible to obtain very fine skiagrams while the patient is holding his breath, by having the patient breathe pure oxygen just before the exposure. This enables him to hold his breath much longer than usual.

Berliner klinische Wochenschrift.

August 3, XLV, No. 31, pp. 1433-1476.

66 *Plastic Restoration of Traumatic Defects of Ear. (Plastische Ersatz von traumatischen Defekten der Ohrmuschel.) V. Schmieden.
67 *Relations between Adrenal System and the Kidneys. (Beziehungen zwischen Adrenal-System and Niere.) K. Reicher.
68 *"Sphincteric Proctitis." H. Strauss.
69 Experimental Study of Keating-Hart "Fulguration" of Vital Organs. G. Arndt and A. Laqueur.
70 Importance of Ultramicroscopy for Clinical Study. (Verwendbarkeit der Dunkelfeldbeleuchtung in der klinischen Mikroskopie.) C. Posner. Id. (Bedeutung der Dunkel- [illegible] tuntersuchungen.) A. Dietrich.
71 [illegible] eld on Secretion of Ferments in the [illegible] (Wirkung der Salzsäure auf die [illegible] Magens und der Bauchspeicheldrüse.) R. Ehrmann and R. Lederer.
72 Determination of "Neutral" Sulphur in Urine. (Bestimmung des "neutralen" Schwefels im Harn.) L. Hess.
73 Present Status of Whooping Cough. (Gegenwärtiger Stand der [illegible]
74 Relatio [illegible] ment Action. (Beziehung [illegible] Fermentwirkung.) M. Krause and Klug.
75 Experiments with Various Derivatives of Tubercle Bacilli. Specificity of Tuberculin Reactions. A. Wolff-Eisner. Commenced in No. 30.

66. **Plastic Restoration of Outer Ear.**—Schmieden reports two cases, calling special attention to the technic followed in one case. The boy's ear had been torn off, and he cut a corresponding piece of cartilage from the costal arch and implanted it in a large skin flap with the attached base above just below the clavicle. Later this flap containing the cartilage with the skin on each side was twisted around and sutured to the stump of the ear. The pedunculated flap was held in place by immobilizing the boy's arm over his head. The technic and results are shown in four illustrations.

67. **Connection Between Adrenal System and the Kidneys.**—Reicher has been conducting experimental research which he thinks has demonstrated that the internal secretion of the adrenals and the intimate mutual relations between the adrenal system and the kidneys have an important share in the pathogenesis of many forms of nephritis.

68. **Sphincteric Proctitis.**—Strauss applies this term to a condition in which the mucosa of the sphincter passage is congested, with excoriations or ulcerations, or a tendency to bleed, and a deposit of mucus in some cases. Occasionally the neck of the ampulla is also involved. All the patients with this affection complained of itching at the anus, tenesmus, and boring or stabbing pains, sometimes preventing sleep. In one case the pain was so severe that there was reflex contraction in the gluteal muscles. Anal eczema was also frequently observed, and hemorrhoids. In many cases a cancer in the rectum had been surmised from the severity of the disturbances. There was invariably spasmodic contraction of the rectum when the finger or an instrument was introduced. He has encountered several dozen cases of this sphincteric proctitis. Treatment includes measures to keep the stools soft and to reduce the local pain with tepid sitz baths, sedative suppositories or astringents. In local treatment he prefers a 2 or 5 per cent. solution of silver nitrate, applied on a cotton swab, under control of the eye. He has also devised a special cap for the syringe which prevents the injected silver nitrate from entering beyond the sphincter canal. He precedes this cauterization with some local anesthetic. In case of eroded hemorrhoid nodules he applies the caustic in the form of a silver salve for which he has devised a salve pessary; the neck of the pessary is provided with lengthwise grooves to hold the salve. Sometimes he prefers local insufflation of a powder. He gives an illustration of the pessary, etc., and urges careful differentiating treatment of this condition. The main thing is careful procto-sigmoscopy in every case in which the patient complains of disturbances in the rectum. The results of rational treatment are excellent.

Correspondenz-Blatt für Schweizer Aerzte, Basle.

August 1, XXXVIII, No. 15, pp. 481-512.

76 Scopolamin-Morphin Anesthesia in Obstetrics. (Scopolamin-Morphium-Dämmerschlaf.) R. Dietschy.

Deutsche medizinische Wochenschrift, Berlin.

July 30, XXXIV, No. 31, pp. 1337-1376.

77 *Tuberculosis of Kidney: Cases illustrating Important Points in Diagnosis. (Nierentuberkulose.) Casper.
78 Serum Diagnosis of Leprosy. (Wassermannsche Reaktion in einem Falle von Lepra.) Wechselmann and G. Meier.
79 Treatment of Septic Affections with Rectal Injection of Silver Salts. (Kollargolklysmen.) C. Seidel.
80 *Pneumococcus Stomach Affection. (Pneumococcenaffektion des Magens.) Münter.
81 *Pyelitis and Its Relation to Menstruation. E. Scheidemandel.
82 Advantages of Pfannenstiel's Transverse Incision of Fascia. (Bedeutung des Pfannenstielschen Fascienquerschnittes.) V. Zimmermann.

77. **Diagnosis of Tuberculosis of the Kidneys.**—Casper has operated in 52 out of 100 cases of tuberculosis of the kidney with a mortality of 5 patients. In the last series of 25 he has had only one death. In 140 operations on the kidneys the only death from renal insufficiency was in a case in which he was unable to apply beforehand the usual functional tests and catheterization of the ureters. When the elimination of sugar after the phloridzin test and elimination of the indigo carmine are notably delayed, it is dubious whether the other kidney alone would prove equal to the task. He would not venture to perform nephrectomy in such a case. In a typical example described, the various tests demonstrated tuberculosis of the left kidney which he consequently removed, although others had claimed to have found tubercle bacilli in the right ureter urine. The course of the case confirmed the correctness of his diagnosis based on cystoscopy, catheterization of the ureters and the functional test. The changes noted in the urine were evidently due to a mild toxic nephritis which subsided promptly after the operation. The Journal has mentioned Völcker's indigo-carmine test or chromocystoscopy, which Casper has improved by combining it with catheterization of the ureters, thus obtaining the "chromo-ureter test," which is very instructive. He remarks, however, that the elimination of indigo-carmine is no index of the work of the kidneys, like the transformation of phloridzin into sugar, but the dye is eliminated like any other foreign substance in the blood fine enough to pass through the kidneys. It only shows how one kidney can eliminate it better than the other. The more rapidly and intensively the dye is eliminated, the better the kidney is working. In case catheterization of the ureters is impossible he tests the kidney functioning by injecting 0.01 gm. phloridzin into the muscles just before the operation. When the kidney is ready for enucleation he makes a further intramuscular injection of 0.08 gm. indigo-carmine. The kidney is then excluded from the circulation with a clamp applied to the pedicle, and the wound is covered. The bladder is then rinsed until the water runs out clear, and the urine then collecting in the bladder, coming from the other, the intact kidney, is examined for albumin, and the delay before the sugar and dye are eliminated is recorded, as well as the intensity of the elimination of the dye. This whole procedure does not require more than five minutes, as the elimination of sugar begins in sixteen minutes and of the dye in eight minutes. He has never witnessed any untoward effects from this method—these small doses of the phloridzin and indigo-carmine being absolutely harmless. This technic obviates the necessity for operating at two sittings. If the sugar appears in from sixteen to twenty minutes and the blue urine in from eight to twelve minutes, if the urine is quite blue, and if there are no more than traces of albumin, the kidney is working

promptly, and the removal of its mate is justified He warns that palpation is liable to be misleading, as neither ureter nor kidney is necessarily enlarged in case of a tuberculous process

80 Pneumococcus Affection of the Stomach—Minter relates the particulars of a case of fatal phlegmonous gastritis produced by pneumococci in a man of 33, rather addicted to alcohol Dieulafoy and Foulerton have reported three somewhat similar cases The pneumococcus affection of the stomach may be primary or secondary to pneumonia or ulcerative angina The mucosa may be mainly involved with parenchymatous inflammation of the glands and hemorrhages, erosions in the mucosa and formation of a pseudomembrane with necrosis of the glandular layer In another form the submucosa may be mainly involved with phlegmons, while the mucosa shows only moderate inflammation and is free from hemorrhages and erosions These two forms correspond to the location of the pneumococci In the case reported the stomach region was very protuberant and the patient was extremely restless All the four cases terminated fatally, although the findings in one case indicated a tendency to spontaneous healing

81 Pyelitis in Women and Menstruation—Scheidemandel rejects internal measures in treatment of pyelitis The main reliance should be on rest in bed copious ingestion of some light diuretic tea, such as linden flower tea, the mo compression light diet and sedatives as needed It has been his experience that pyelitis is much more frequent in women than in men The temperature suddenly rises and pain develops, generally on the right side, while the finding of pus and bacteria in the urine confirms the diagnosis After five or six days of continuous fever defervescence occurs, as in pneumonia After a few days free from fever there is usually another milder attack on the hitherto sound side He ascribes the pyelitis to ascending infection from the anus generally the work of the colon bacillus After two or three attacks the trouble is at an end, transition into the chronic form of pyelitis is rare He calls attention to the frequent regularity of the first appearance of the pyelitis three days before the onset of the menses The characteristic pain is not connected with the menstrual hemorrhage necessarily but may correspond with ovulation Even at the beginning of the first attack, catheterization of the ureter may show a latent affection of the other kidney pelvis In sixteen cases of simple pyelitis referred to him in the last few years the diagnosis had not been correctly made in a single instance and he believes that many cases of supposed appendicitis are in reality right pyelitis His patients were between 25 and 45 years old, and transient complications on the part of the bladder were noted in three cases, herpes labialis in two and severe sciatica in one The urine was free from colon bacilli on dismissal in only about half the cases The affected kidney is sometimes more painful on pressure from the rear than from the front If the urine is examined with the microscope more regularly, and the kidneys are palpated in all dubious affections, simple pyelitis will be found to be more frequent than is realized at present The prognosis is favorable, surgical measures are not required except in the severest cases

Medizinische Klinik, Berlin.

August 2, IV, No 31, pp 1179 1218

83 *Practical Importance of Serum Diagnosis of Syphilis A Blaschko
84 *Serum Diagnosis in Mothers of Infants with Inherited Syphilis (Komplementfixation bei Muttern heredosyphilitischer Sauglinge.) W Knoepfelmacher and H Lehndorff
85 *Diagnosis of Liver Affections (Moderne Leberdiagnostik) A Posselt Commenced in No 30
86 *Suture of Tendons (Neue Methode der Sehnennaht) C Ritter
87 Resection of Anterior Half of Eyeball after Injury (Resektion der Vorderhalfte des Augapfels nach Verletzungen) C Ziem
88 *Chorioepithelioma in a Man M Chuvin.
89 Percussion Hammer and Plessimeter for Threshold Percussion of the Heart (Schwellenwertsperkussion des Herzens) R Lenzmann
90 New Light on Phenomena of Mendel s Law and Atavism (Neure Untersuchungen uber Atavismus bei Bastarden) E Baur
91 Etiology of Digestive Gastrosuccorrhea (Aetiologie des digestiven Magensaftflusses) P Huppert

83 Practical Importance of Serum Diagnosis of Syphilis—Blaschko discusses the indications for treatment on the basis of the serum diagnosis and the prognosis His conclusions are that to date serum diagnosis has very little practical importance One must be very cautious in basing conclusions on it The main thing at present is to accumulate further experiences with it

84 Serum Diagnosis in Mothers of Infants with Inherited Syphilis—Knoepfelmacher has continued his research in this line and states that positive findings were obtained in about 56.2 per cent of 45 women, 32 of whom denied having had syphilis The findings were positive also in 61.5 per cent of 13 women known to have had syphilis These findings are about in the same proportions as in known syphilitics in a latent stage They seem to demonstrate that the mothers of children with inherited syphilis have had syphilis themselves in the past

85 Diagnosis of Liver Affections—Posselt discusses in detail the modern methods of testing the functioning of the liver and throwing light on the origin of liver affections It is evident that a large proportion of cases of gallstones are traceable to typhoid infection in the past He mentions that Basle and Strasburg, which are noted for the prevalence of typhoid have nearly twice as many cases of gallstones as certain other European cities, according to the official autopsy reports Paratyphoid processes, meat poisoning and dysentery are also possible sources for the infection in the bile region responsible for cholelithiasis later, as also residence in a typhoid district He insists on the necessity for making greater use of the biologic reactions, especially agglutination, as an aid in the diagnosis of liver affections, particularly in those due to the colon bacillus

86 Tendon Suture.—Ritter reports from Payr's clinic at Greifswald some new methods of suturing tendons with the aid of a segment of a vein taken from some animal Even when there is a quite a gap between the stumps of the tendon, good results are obtained as the new growth is confined to its proper place by the enclosing wall of the vessel cylinder When the stumps are of uneven size he adapts the encircling cylinder to this condition by cutting it with a spiral incision, making several turns The cylinder is then fitted to enclose the two stumps and the spiral incision is then sutured its entire length, as he shows in an illustration, reporting a clinical case in which the tendons in the thumb had been severed, leaving a large gap bridged in this way.

88 Chorioepithelioma in a Man—The case reported by Chuvin from Odessa was distinguished by the predominance of the general symptoms The existence of the primary malignant tumor in the testicle was masked by the secondary metastases simulating miliary tuberculosis The principal symptoms were extreme dyspnea, cough and rapid and small pulse, while the heart findings were negative The patient was a college student of a healthy family who had been ailing for six months complaining of pains in the right side, occasional fever and cough The primary tumor in the testicle was an autopsy surprise

Munchener medizinische Wochenschrift.

July 28, LV, No 30, pp 1569 1624

92 *Treatment of Obesity by Exclusive Milk Diet (Entfettung durch reine Milchkuren) F Moritz
93 Induration of Apex from Obstructed Nose Breathing and Its Differentiation (Kollapsinduration der rechten Lungenspitze bei chronisch behinderter Nasenatmung) K Blumel
94 Possibility and Importance of Retrograde Lymph Current from Thoracic Duct (Retrograden Lymphtransport im Bereich des Angulus venosus sinister) C Hart
95 *Beef Serum Treatment of Gonorrheal Ophthalmia in the Newly Born (Behandlung der Blennorrhœa neonatorum mit Rinderserum) W Gilbert
96 Artificially Carbonated Baths (Sarasonsche Ozetbader) E Müller
97 Artificial Sulphur Baths (Künstliche Schwefelbäder) F Klopstock
98 Operation and Aftertreatment of Mammary Cancer (Brustkrebs) Heile
99 *Karell s Milk Diet and Underfeeding in Failing Heart Compensation (Karellsche Milchkur und die Unterernahrung bei Kompensationsstorungen) F Hirschfeld.
100 Physiology of Acclimatization O Loew
101 Growth of Lactic Acid Bacilli in Stomach Content (Wachstumsfähigkeit von Boas Kaufmannschen Bazillen im Mageninhalt) R. Latzel
102 Prophylaxis of Myopia (Kurzsichtigkeit und ihre Verhutung) Best. Commenced in No 29.

92 **Exclusive Milk Diet in Treatment of Obesity.**—Moritz has been delighted with his experience with this means of influencing obesity. It is the simplest and most convenient technic, he says, as well as the cheapest, while it permits individualization and makes the least demands on the patient's attention He has found it extremely effective, as he shows by eight typical examples The patients lost from 16 to 46 pounds in from 15 to 81 days on the exclusive milk diet, while it had a favorable influence on complications on the part of the heart and kidneys The heart disturbances subsided and the pulse tension and rate declined He allows from 3 to 5 pints of milk a day, in five portions approximately a pint at breakfast time, a glass at 10 a m, a pint at noon, another glass at 4 p m, and a pint at 7 p m The milk is taken cold or warm, as desired, and up to a pint of water may be added This technic obviates thirst and hunger, while the weight rapidly declines Another advantage is the absence of salt from the diet The only by effect observed is a tendency to constipation which must be combated, occasionally there is a little headache or backache with depression if the weight declines too rapidly He gives the tabulated findings of the metabolism for three months in one case, remarking that the conditions on the milk diet are remarkably simple and instructive (See also abstract 116 in The Journal, June 6, page 1951)

95 **Treatment of Ophthalmia Neonatorum with Beef Serum.**—Gilbert refers to the experiences with beef serum for local applications to suppurative processes recently reported by Muller and Moro He states that he has applied this technic in eight cases of gonorrheal ophthalmia in newly born children, alone or in combination with silver nitrate The results were favorable, and he advocates its general adoption He rinses out the eyes every two hours with the beef serum, kept on ice, fresh every twenty four hours It much shortens the duration of treatment according to his experience

99 **Underfeeding in Failing Compensation.**—Hirschfeld is convinced that underfeeding is an efficient means of controlling failing compensation This is the explanation of the efficacy of the Karell milk cure in heart disease It is a method of underfeeding, and the same result can be accomplished with a restricted mixed diet (See Abstract 92)

Wiener klinische Wochenschrift.

July 30, XXI, No 31 pp 1109 1144

103 *Removal of Hypophysis for Adipose Genital Degeneration A v *Eiselsberg and L v Frankl Hochwart*
104 *Affections of Optic Nerve in Course of Pregnancy (Sehnervenleiden in Folge von Gravidität) A v Reuss
105 Hyperplasia of Thymus in Addison's Disease K Hart
106 Colon Bacilli Infection of Respiratory Organs (Kolibazillose der Respirationsorgane) H v Schrotter and M Weinberger Commenced in No 30

August 6, No 32, pp 1145 1174

107 Ocular Tuberculin Reaction (Konjunktivale Tuberkulinreaktion) A Krokiewicz
108 Diagnostic Importance of Ocular Tuberculin Reaction in General Practice (Konjunctival genannt Ophthalmoreaktion) L Hans
109 *Diagnostic Importance of Composition of Urine in Pneumonia (Zusammensetzung des Harnes bei der Lungenentzündung) E Zak Commenced in No 31
110 Impressions of a Surgeon Visiting North America (Chirurgische Eindrucke aus Nordamerika) P Clairmont Commenced in No 31

103 **Operations on the Hypophysis**—This article reports two more cases of removal of a tumor in the hypophysis through the nose to improve conditions of the type called by Frohlich "adipose genital degeneration" The first patient, male, was operated on in June, the second in October, 1907 The symptoms in the first case were headache, amaurosis and atrophy of the optic nerve on the left side, with right hemianopsia and atrophy of the temporal half of the papilla, arrested growth, obesity and infantile genitals The extirpated tumor was suspiciously like carcinoma The patient has been constantly improving in every way since, he is free from headache and vertigo, while vision improved at once and permanently, and the sexual functions have become apparently normal The latest case was that of a man of 27, very short and corpulent, no erections or trace of hair on chin and pubes, with headache for two years with brief remissions, occasional vertigo and disturbance in vision For a time he could only count fingers at a few feet, but later was able to read with one eye His hair was gray, but his appearance was otherwise very childlike The tumor in the hypophysis proved to be an angiosarcoma and marked improvement followed its removal Hochenegg has reported the successful removal of a tumor in the hypophysis in a case of acromegaly The technic and differentiation are described in detail

104 **Optic Disturbances from Pregnancy.**—Reuss describes a case in which the patient had visual disturbances during her latest pregnancies, amounting almost to blindness and then retrogressing after delivery. In nearly all such cases on record the trouble was a chronic retrobulbar neuritis, with central scotoma, and optic neuritis with atrophy, always with visible signs of inflammation He reviews the literature on the subject, and suggests the possibility of abnormal size and shape of the hypophysis and sella turcica, swollen from the changes of pregnancy, *as the cause of the visual disturbances*, although he was unable to examine the patient with the Roentgen rays in his case.

109 **Composition of the Urine in Pneumonia.**—For years Zak has been studying the composition of the urine in pneumonia—a total of 190 cases with 449 examinations; 65 examinations of 50 febrile tuberculous patients, and 90 examinations of 13 others The results show an almost typical composition of the urine in pneumonia. About the fifth day the findings in the urine are characteristic of croupous pneumonia the gradual increase of albumin, of acetic acid bodies, of primary albumoses and other albumoses and of urobilin, while lime and the chlorids are much reduced Still more characteristic is the occurrence of large numbers of coarsely granular "incrusted" tube casts These casts are short, gray ish brown, with irregular surface, and one glance in the *microscope will suggest the diagnosis* of pneumonia. They are stiff with incrustation with urates, and generally appear in large numbers, but only for a short time, then suddenly giving place to hyaline or other ordinary casts This characteristic output of the incrusted casts occurs at the height of the disease They are also observed, although less frequently and with less of this overwhelming suddenness, in sepsis, cancer, diabetes, peritonitis and articular rheumatism The pneumonia urine findings can confirm the diagnosis of pneumonia in dubious cases, although scarcely conclusive alone

Zeitschrift fur Geburtshulfe und Gynakologie, Stuttgart.

LXII, No 2, pp 177 392 Last indexed July 25, page 359

111 Practical [illegible] t for Diagnosis of Inflamm[illegible] (Praktische Verwertbarkeit [illegible] für die Diagnose entzündlicher Erkrankungen des weiblichen Genitale) H Albrecht
112 *Behavior of Ureters After the More Comprehensive Abdominal Operations for Uterus Carcinoma (Verhalten der Ureteren nach der erweiterten abdominalen Operation des Uteruskarzinoms) W Weibel
113 *Experimental and Clinical Study of Pregnancy Tetany (Graviditatstetanie) L Adler and H Thaler
114 Influence of Breast Nursing on Infants in the First Few Days after Birth (Einfluss des Selbststillens der Mutter auf die Neugeborenen in den ersten Lebenstagen) F Dohrig
115 Genesis of Hematosalpinx with Unilateral Hematometra G Schubert
116 *What Can Be Learned from Cystoscopy in Regard to Indications and Prognosis for Abdominal Cancer Operations? (Was leistet, die Cystoskopie hinsichtlich der Indikations und Prognosenstellung der abdominalen Krebsoperation?) W Hannes
117 Apparent Anaplasia of Cancer Cells (Verbrennungserscheinungen am Epithel) K Holzapfel
118 Case of Gravid Rudimentary Pseudodouble Uterus (Uterus pseudodidelphys) R Oerl

112 **Behavior of Ureters After Abdominal Operation for Uterine Cancer**—This communication issues from Wertheim's clinic and reviews the experiences in regard to the ureters with his technic for removal of cancer of the uterus In 400 operations of the kind the ureter was injured in 24 cases, that is in 6 per cent in 3 cases both ureters were injured The injury caused necrosis with a fistula; the most critical period was the second week Most of these fistulas healed spontaneously between the third and twelfth week, but even after the third month spontaneous healing was sometimes observed No disturbances were evident later in the injured ureter, even after years, except that the intervals between

the contractions were somewhat longer. Conservative treatment should be the rule; if ascending infection of the kidney is observed he would advise nephrectomy, if possible. Spontaneous healing occurred in two cases of bilateral injury; the other patient was treated by implantation of both ureters in the bladder.

113. **Pregnancy Tetany.**—Adler and Thaler report a case of tetany developing during parturition and another in which it developed as the patient began to nurse her infant. They review the literature and report extensive experimental research which confirms the connection between the parathyroids and pregnancy tetany.

116. **Cystoscopy and Abdominal Cancer Operations.**—Hannes has examined 200 women with carcinoma of the cervix, using the cystoscope in a large number. He describes the important indications in respect to operation and prognosis that can be learned by this means. Especially important is his assertion that no complications on the part of the bladder during the operation need be feared when cystoscopy gives entirely negative findings. The cystoscope shows whether the vesico-cervical septum is still free from involvement and the bladder can be readily detached. Even when the cystoscope shows severe bladder changes the lesion is not necessarily inoperable.

Gazzetta degli Ospedali e delle Cliniche, Milan.

July 26, XXIX, No. 89, pp. 937-952.

119 Hygienic Care of Grain in Prophylaxis of Pellagra. (Profilassi della pellagra.) E. Ronzani.
120 *Serum Diagnosis of Syphilis with Antigens from Rabbits. (Cornea sifilitica del coniglio nella reazione del Wassermann.) F. Simonelli.
121 Individualization in Treatment of Inguinal Hernia. (Costituzione anatomica e cura radicale dell'ernia inguinale.) D'Elia Nicola.

120. **Syphilitic Cornea of the Rabbit Aid to Serum Diagnosis.**—Simonelli's research has confirmed the specific character of the lesions in the rabbit cornea produced by inoculation with human syphilitic material. He has also found that an extract of the cornea can be utilized for the serum diagnosis of syphilis. The lesion contains the pale spirochete and the antigen necessary to induce the specific reaction by fixation of the complement. The rabbit cornea may prove a convenient means of obtaining the necessary antigen, instead of the extract of syphilitic organs hitherto deemed indispensable.

Policlinico, Rome.

August 2, XV, Practical Section, No. 31, pp. 955-996.

122 The abdominal Reflex. (Riflesso addominale.) A. Baldi.

Norsk Magazin for Lægevidenskaben, Christiania.

August, LXIX, No. 8, pp. 737-832.

123 Acetonuria and Acidosis. H. C. Gelmuyden.
124 *Tumors in Hypophysis and Acromegaly. (Svulster i hypofysen og akromegali.) F. Harbitz.
125 Dislocation of the Os Magnum. (Luxatio dorsalis ossis magni carpi. P. Bull.
126 Fracture of Radius in Children. (*Fractura radii hos børn.*) J. Nicolaysen.

124. **Tumors in the Hypophysis and Acromegaly.**—Harbitz reports 6 cases of tumor in the hypophysis; 2 were in men 33 and 51 years old, and 4 in women between 22 and 60. The tumor was accompanied by acromegaly in only one case, but there was a history of syphilis in one woman, and the man of 51 had diabetes insipidus. The reports are all postmortem findings, although the clinical course is also given. Josefson of Stockholm has reported 4 cases of hypophysis tumor, none accompanied by acromegaly, and Berner has reported a case accompanied by diabetes insipidus but no acromegaly, and about 40 or 50 cases of hypophysis tumor without acromegaly are on record. Impotence and amenorrhea were occasionally noted. There is still enough evidence, however, Harbitz declares, to show a certain causal connection between acromegaly and abnormal conditions in the hypophysis and possibly also in other organs, especially the thyroid. Acromegaly should not be regarded as a direct consequence of a tumor in the hypophysis. Its real cause should be sought deeper than this, probably in some constitutional weakness, with abnormal conditions in a whole series of organs with an internal secretion which may manifest itself in some individuals in a pathologic outgrowth.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

PATHOLOGIC TECHNIC. [illegible] ·llory, A.M., M.D., Associate Professor of [illegible] University Medical School, and James Home [illegible] S.D., Director of the Pathologic Laboratory [illegible] General Hospital. Fourth Edition. Cloth. Pp. 480, with illustrations. Price, $3.00 Philadelphia: W. B. Saunders Co., 1908.

PULSATING EXOPHTHALMOS. By George E. de Schweinitz, M.D., Professor of Ophthalmology in the University of Pennsylvania, and Thomas B. Holloway, M.D., Instructor in Ophthalmology in the University of Pennsylvania. Cloth. Pp. 124. Price, $2.00. Philadelphia: W. B. Saunders Co., 1908.

ESTIMATION OF THE RENAL FUNCTION IN URINARY SURGERY. By J. W. Thomson Walker, M.B., C.M. (Edin.), F.R.C.S., Hunterian Professor of Surgery and Pathology, Royal College of Surgeons of England. Cloth. Pp. 273, with illustrations. London: Cassell & Co., 1908.

PRINCIPLES AND PRACTICE OF GYNECOLOGY. By E. C. Dudley, A.M., M.D., Professor of Gynecology, Northwestern University Medical School. Fifth Edition. Cloth. *Pp. 806, with* illustrations. Price, $5.00. Philadelphia: Lea & Febiger, 1908.

DISEASES OF THE SKIN. By George Thomas Jackson, M.D., Professor of Dermatology, College of Physicians and Surgeons, New York. Cloth. Pp. 737, with illustrations. Sixth Edition. Price, $3.00. Philadelphia: Lea & Febiger.

SIXTEENTH AND SEVENTEENTH ANNUAL REPORTS OF THE ST. JOSEPH'S HOSPITAL, Yonkers, N. Y. Under the Charge of the Sisters of Charity. Oct. 1, 1905, to Sept. 30, 1907. Paper. Pp. 81.

ARSENIC GAS POISONING. By John Glaister, Doctor of Medicine of the University of Glasgow. Cloth. Pp. 279, with illustrations. Price, $1.25. Edinburgh: *E. & S. Livingstone*, 1908.

CHOLÉCYSTO-PANCRÉATITE. Essai de Pathogénie, by Le Docteur Reine Maugeret, Ancien Interne des Hôpitaux de Paris. Paper. Pp. 149, with illustrations. Paris: G. Steinheil, 1908.

TRANSACTIONS OF THE INTERNATIONAL MEDICAL ASSOCIATION OF MEXICO. Third Annual Session, held at Monterey, N. M. Paper. Pp. 66. Monterey: American Printing Co., 1908.

TRANSACTIONS OF THE NEW HAMPSHIRE MEDICAL SOCIETY. 117th Anniversary, Held at Concord, May, 1908. Cloth. Pp. 328. Concord: Ira C. Evans Co., 1908.

NINETEENTH ANNUAL REPORT OF THE NEW AMSTERDAM EYE AND EAR HOSPITAL. For the Year 1907. Paper. Pp. 30. New York: Press of W. N. Jennings, 1907.

REPORT OF THE COLLIS P. HUNTINGTON FUND FOR CANCER RESEARCH OF THE GENERAL MEMORIAL HOSPITAL. Vol. ii. Paper. New York City, 1908.

TWENTY-SECOND ANNUAL REPORTS OF THE DANBURY HOSPITAL. Danbury, Conn. 1907. Paper. Pp. 33. Danbury: News, Book and Job Print., 1907.

AKUT APPENDICIT OG DENS KIRURGISKE BEHANDLING. By Dr. P. Bull. Paper. Pp. 145. Christiania: Steen'ske Bogtrykkeri, 1908.

STUDIES FROM THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH. Reprints. Vol. viii. Paper. Pp. 453, with illustrations.

ANNUAL REPORT of the Hospital Association of the City of Schenectady, 1907. Paper. Pp. 44.

NEW PATENTS.

Recent patents of interest to physicians:

894337.	Spirometer. J. A. Morris, Atlanta, Ga.
894758.	Inspirator. C. F. Starre, Portland, Ore.
894764.	*Preparing arsenic trioxid.* U. Wedge, Ardmore, Pa.
895141.	Apparatus for applying medicinal washes to the nasal cavity. E. S. Antisdale, Chicago.
895145.	*Corn and bunion plaster.* P. S. Bauer, Chicago.
894818.	Electrode for the evolution of ozone from oxygen or atmospheric air. J. R. Craig, Jr., London, Eng.
895295.	Wrinkle-eradicator. F. A. Paris, New York.
894917.	Powder-dividing and capsule-filling apparatus. L. G. Taylor, Kansas City.
895316.	Preparing nitrils of aromatic alpha-oxyacids. J. L. Turner, Philadelphia, and C. E. Vanderkleed, Collingswood, N. J.
895221.	Disinfecting apparatus. V. A. Williams, Sedalia, Mo.
894929.	Surgical appliance. W. C. Yates, Lemoore, Cal.
895539.	Arch and ankle support. L. J. Courteau, Brockton, Mass.
895852.	Urinary apparatus. D. Girouard, Leominster, Mass.
895478.	Radium preparation. H. Lieber, New York.
895505.	Vibratory massage apparatus. V. Sence, New York.
895510.	Hospital nightgown. E. Snellenburg, Philadelphia.
895812.	Bottle or receptacle for liquids for medical and other uses. F. Strauss, Milwaukee, Wis.
895919.	Medical cabinet. J. S. Wailes, Mystic, Iowa.
895606.	Respirometer. A. G. Warde, Minneapolis.
896505.	Apparatus for massaging the vaginal walls, etc. J. E. Ament, Indiana, Pa.
896432.	Tray for instruments. C. F. Booth, Canandaigua, N. Y.
896538.	Head and face steamer. R. M. Henry and W. Hester, Indianapolis.
896114.	Orthopedic apparatus. J. Jacobson, Brooklyn.
896647.	Hair tonic. S. R. Mackay, Cape Breton, N. S., Canada.
896409.	Antiseptic cone. G. C. McMurtry, Los Angeles, Cal.
896583.	Abdominal supporter. L. Ross, Watertown, Mass.
896338.	Combined tweezers and blackhead remover. A. L. Tolman, Orange, Mass.
896179.	Invalid bed. U. G. Vance and R. Critser, Lapel, Ind.
896674.	Surgical splint. C. A. Walker, Louisville, Ohio.

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Original Articles

THE CEREBRAL CENTERS FOR TASTE AND SMELL AND THE UNCINATE GROUP OF FITS,*

BASED ON THE STUDY OF A CASE OF TUMOR OF THE TEMPORAL LOBE WITH NECROPSY

CHARLES K. MILLS, M.D.

Professor of Neurology in the University of Pennsylvania; Neurologist to the Philadelphia General Hospital

PHILADELPHIA.

The case which forms the text of this article was first studied by me in April, 1904, although I had received communications regarding the patient from her husband, a journalist, and had seen her once or twice before this date.

The patient was a married woman, aged 34 at the time of my first examination. She was the daughter of first cousins. No history of epilepsy in the family was known. One sister had chorea when a child, but entirely recovered and grew to womanhood without any further evidence of nervousness. Another sister has had some sort of spasm at intervals. The patient had had fair health up to the age of 30 years, although she had suffered considerably from headache at irregular but somewhat frequent intervals from early childhood. Between one and two years before coming under observation her headaches had become rather severe, the pain being referred chiefly to the forehead, but sometimes affecting the back of the head. The patient stated that she remembered when a child of having had a spell or period of dizziness, which lasted perhaps a week and was of uncertain origin. In 1899, about a year after the birth of her first child, she began to have slight seizures of a peculiar character. In these spells she was said to have nausea, to be somewhat confused, and to articulate indistinctly or incoherently. They usually lasted about half a minute. She did not at first become unconscious in them. In October, 1903, she became unconscious in one of her seizures. The spells without unconsciousness or spasm which she had continued to have at intervals from 1899 until 1903 gradually became more frequent. She sometimes had several daily, and then a week might elapse without any. In these seizures her face would turn of an ashen hue and her expression become drawn. The convulsion which occurred in October was preceded or ushered in by the phenomena of one of her usual seizures. In this attack some spasm on the right side of the face was noted. She slobbered and smiled as she recovered from this attack, and for a few minutes after recovery could not recollect anything. She did not pass into a sleep after this and other attacks, nor did she bite her tongue in any of them. A week or two after this convulsion she began again to have her original form of seizure.

Shortly after the patient first came under my observation in April, 1904, I made several careful examinations of her. Later I saw her at intervals of several weeks or months, occasionally examining her as regards her special senses, sensation, motility, reflexes and mental state. Her husband, who was a good observer, from time to time until her death, reported on her condition to me, furnishing special data with regard to her seizures. I did not see her, however, for about six months before her death. The patient, in describing her attacks in the spring of 1904, said that she had a sensation of some kind in the region of the stomach. This was soon followed by a sensation of taste and then of smell. These were of a definite character in that they recurred in the same way. She could not tell what the taste or smell was, that is she was not able to refer it to any particular variety of taste or smell, although she sometimes thought that she was just about to be able to do this. She thought that the smell was somewhat like that of a flower, but she could not name the flower. These sensations were in some instances accompanied by smacking of the lips, or as her husband expressed it, clapping of the lips and champing or chewing movements. Immediately after these gustatory and olfactory aura, she became more or less dazed, this confusion being worse at times, in some instances she would keep right on talking through the spell.'

Examination for taste showed that on the back of the tongue she was able to taste correctly. In the chorda tympani area of the tongue the patient said in response to the test that she tasted something but could not distinguish the quality or flavor of what she tasted. Salt was appreciated as sour or acid on both sides; sweet was not recognized as such, and bitter substances had the same taste as sweet. The tests were made with care with washings of the mouth and with intervals between them so as not to cause confusion by the mingling of different substances.

Smell was retained. At one of her visits, May 6, 1904, she gave an interesting statement with regard to her ability to smell. She said that a day or two before she had been out in the woods and had tried to smell some little green bunches of leaves, which she did not know by sight; by smelling them she thought they were sassafras but was not sure of it. She picked several flowers and could smell their fragrance. In cooking she could smell very well, distinguishing the different substances which were being cooked. Examination of her nostrils for motor power by having her sniff with them, with or without the examiner's finger on them, showed undoubtedly that more force was exerted by the right nostril than by the left. She spontaneously spoke of this difference. She said that she could sniff much better with the right than with the left side of the nose. The left nostril seemed smaller and thinner than the right. The tongue was protruded in the median line, was not atrophied, and had no fibrillary tremor. All its voluntary movements could be performed. The left half of the tongue seemed to be a little smaller and flatter than the right. The left pupil was slightly larger than the right; both pupils responded to light and in accommodation. No nystagmus was present and no external ocular palsies.

Before coming under my care this patient had been seen by Dr. C. A. Oliver of Philadelphia, who has kindly furnished me with the following report: "At 14 years of age the patient accidentally discovered that the vision of her left eye was not so good as its fellow. At that time, glasses, which were worn comfortably for six years, were ordered by a well known ophthalmologist. In 1900 she saw another ophthalmologist who operated on the left externus and two years later on the right externus. The exterior eye muscles were exercised and iodid of potassium was given. When first seen by me on Dec. 2, 1903, the patient had normal vision for both form and color in each eye, the right eye being far-sighted and astigmatic and the left eye near-sighted and astigmatic. The left pupil was the larger (4½ mm.), while that of the right was [illegible] mm. in size. The irides were equally and freely mobile to light stimuli, accommodation and convergence. The actions of the exterior ocular muscles were good in every direction with proper muscle equilibrium. The visual fields were normal. The patient's husband informed me that the patient had had epileptic seizures with olfactory aura and that these had given rise to the 'spells.' A diagnosis of epilepsy and ametropia (the ophthalmic signs and symptoms being negative) with a suspicion of a focal cerebral lesion, which was either a tumor or a localized meningitis, was made. [illegible] noted that the patient apparently improved after her treatments.

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*From the Department of Neurology of the University of Pennsylvania.

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

In May, 1904, careful examinations were made for sensation, [illegible] and reflexes in all parts of the body, the result being almost entirely negative. Movements of the muscles supplied by the motor division of the trigeminus and by the seventh nerve with the exception of one nostril, [illegible] were not impaired. No ataxia of station was present and no paralysis and no paresis or ataxia of the extremities. Sensation was everywhere preserved. The reflexes also were preserved, the knee jerks, however, were depressed, more markedly on the left. This may have been due to the use of bromids, which had been administered for several months. The bowels and bladder were unaffected. The general condition of the patient was good. Her mentality was fully retained and no aphasia was present. The patient was perhaps at times a little apathetic, but on the whole was in good spirits. She seemed at times in a state of dreaminess.

My last examination, which was made in August, 1907, never showed any paralysis, disorder of sensation nor hemianopsia. Her husband stated that she was never paralysed in her face, arm, leg or in any part of her body. Inquiring with regard to hemianopsia, he said that she never appeared to be blind or partially so, either to the right or to the left. She did not run up against things to either side. The only visual phenomenon which he observed was that she said if she looked a certain way to one side she felt as though a spell were coming on.

Under the influence of a combination of sodium iodid, sodium bromid, Fowler's solution and fluid extract of conium the number of the patient's attacks considerably decreased. She continued, however, to have them at varying intervals of days, weeks or months as long as she remained under my direct observation, which was during 1904 and 1905. Intelligent reports of her attacks and of her condition during the intervals were made by her husband during this time and for the record of her condition for a year before her death I am entirely dependent on these reports.

Her husband reported that in August, 1906, she began to run down and that her speech was incoherent, with decided aphasia. Whether this was in a technical sense aphasia is doubtful. The patient evidently had some difficulty in remembering words and some slowness and hesitation of speech. Her general health declined so that her weight dropped from 140 to 119 pounds. She came home from her vacation in the summer a physical and almost a mental wreck. She would get out of bed at night unable to tell which way to go to the door. In September, 1906, all medicine was stopped and her old spells began to be more severe and frequent, but she recovered her general tone and her speech. When she was what was termed "aphasic" she would forget words. She would come into a room, for instance, saying "Where are the——" and after some hesitation she would say, "Oh, I mean the scissors." At other times she would substitute wrong words. The patient recovered sufficiently from this so that one would hardly notice any difference between her speech and that of a person who was slightly forgetful of words. She went along about the same until March, 1907. The spells usually occurred in the early morning and her husband would be awakened by a clipping of her lips. One morning on hearing this noise he spoke to and touched the patient, who then went into a general convulsion.

She was last seen by me in August, 1907. She was at this time very sleepy and drowsy. At the time of her visit to my office she lay down on the sofa and went to sleep. She had at times been taking two or three doses of bromid daily. Little change occurred in her condition until about December

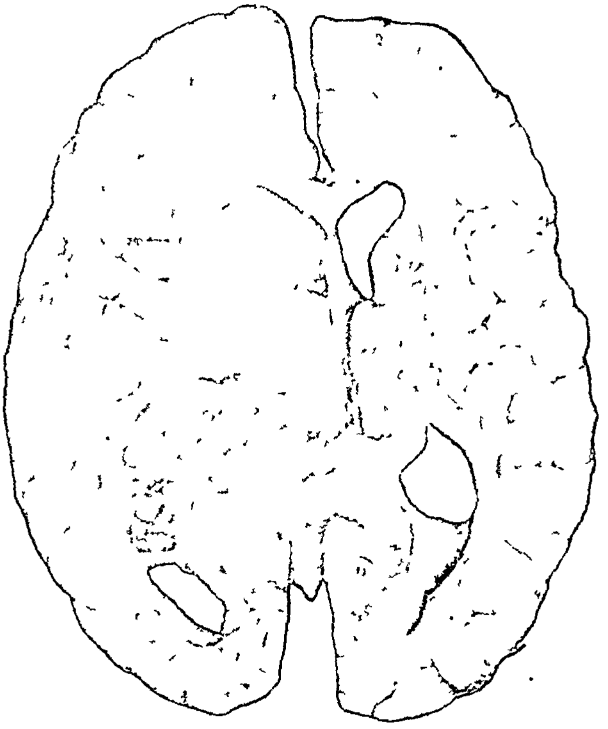

Fig. 1.—Photograph of a section at the upper part of the basal ganglia showing the tumor invading the left thalamus filling the front part of the posterior horn of the lateral ventricle and implicating the extreme anterior part of the median aspect of the occipital lobe.

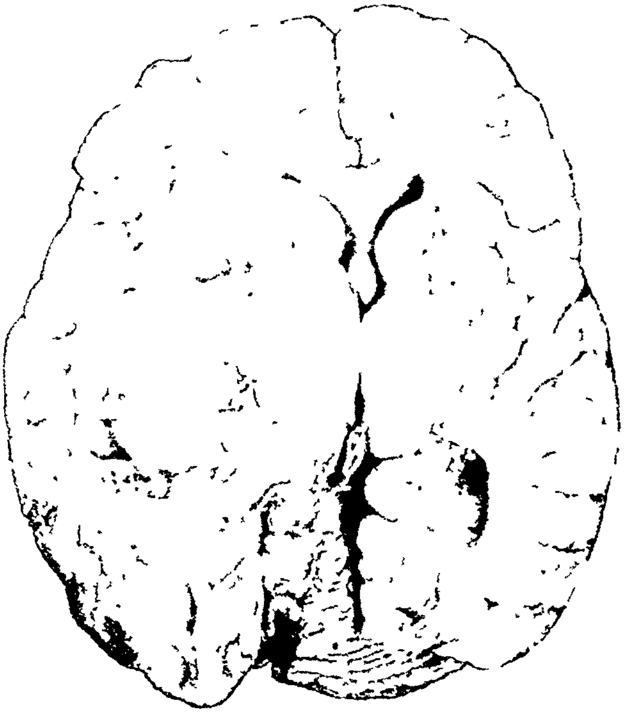

Fig. 2.—Photograph of a section at a level of about ¼ of an inch below that represented in Figure 1, showing the tumor extending to the anterior and median surfaces of the occipital lobe and involving almost all of the lenticula.

26 or 27, about two months before her death. She was taken at this time with what was said to be influenza and she was treated for such principally with remedies like phenacetin, quinin, strychnin, etc. All bromids were stopped at this time. Between January 22 and the date of her death, February 22, she had perhaps six of the following peculiar spells: She would throw up her hands as if in great pain or distress, but could not tell where, except that at the same time she would say tuat the left side of her body felt numb or asleep or dead. She was not unconscious, but the feelings and condition would last two or three minutes. The morning before her death she had a severe spell. The morning she died she lapsed into unconsciousness and never recovered.

Necropsy having been permitted, Dr. Samuel Leopold of the clinical and pathologic staffs of the neurologic service of the University of Pennsylvania made a postmortem examination and obtained the brain. The specimen was placed in the hands of Dr. William G. Spiller for investigation in the laboratory of neuropathology of the University of Pennsylvania. *The following report* was made by Dr. Spiller: "The tumor is on the left side of the brain. The left cerebral hemisphere is much larger than the right. In a transverse section *at the level of the upper part of the callosum the tumor fills* the lateral ventricle above the thalamus, extending to the roof of the ventricle *and cutting off the anterior part of the ventricle* above the head of the caudate nucleus from the posterior part of the ventricle. The tumor has the appearance of a glioma, is infiltrating and gelatinous in places. The upper part of the thalamus is entirely replaced by it. At a little lower level, where the anterior and posterior limbs of the internal capsule are well formed, the tumor invades the thalamus, fills the front part of the posterior horn of the lateral ventricle, implicates the extreme anterior part of the median aspect of the occipital lobe, distorts the outer wall of the posterior horn of the lateral ventricle without extending into the temporal lobe, and involves the posterior part of the posterior limb of the internal capsule (Fig. 1) and a large part of the lenticula.

At a level about one-fourth of an inch lower than the one above described the tumor extends to the anterior median surface of the occipital lobe, involves almost all of the lenticula, but does not extend into the white matter of the temporal lobe nor into the head of the caudatum, nor into the foot of the cerebral peduncle, which just below this level is beginning to form (Fig. 2).

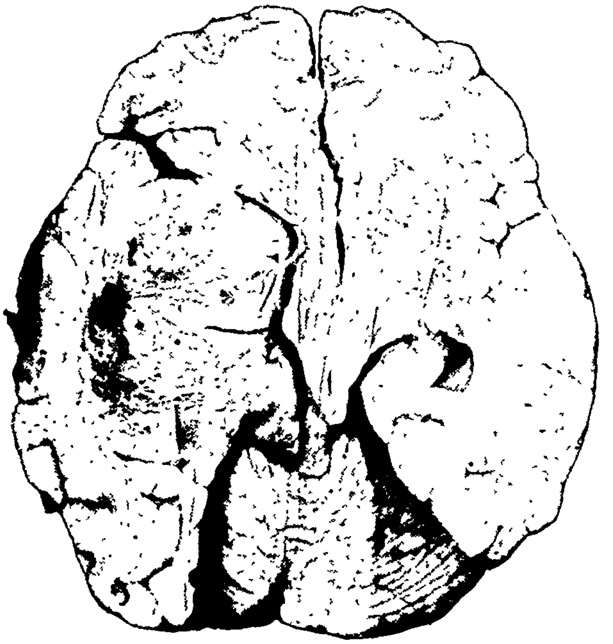

Fig. 3.—Photograph of a section at a level of about ¼ of an inch below that shown in Figure 2. The tumor fills all the anterior and median portions of the temporal lobe (uncinate and hippocampal convolutions) extending into the middle part of the lobe, including the subcortex of the fourth temporal; it also slightly invades the extreme anterior part of the occipital lobe.

At a level about one fourth of an inch still lower, where the cerebral peduncle is well formed, the tumor fills all of the anterior and median portions of the temporal lobe (uncinate and hippocampal convolutions) and the middle part of the lobe, but leaves the occipital lobe intact except in its extreme anterior part, and does not invade the lateral aspect of the temporal lobe or its subcortical white matter (Fig. 3). The tumor extends as a pointed process of brain tissue over the left cerebral peduncle (Fig. 4) this being the only portion of the tumor appearing on the surface."

It will be noted in the description of the position and extent of the lesion in this case, that it involved the uncinate, hippocampal, and the fourth temporal convolutions and their subcortical white matter, but did not extend further into the temporal lobe. It is probable that the gustatory and olfactory discharges were due to the implication of the cortex in these regions. Of course, it cannot be overlooked that the tumor extended considerably beyond the lower temporal region, invading the anterior part of the occipital lobe and destroying large portions of the lenticula and the thalamus. But with our knowlege of previous cases, and with the experimental evidence regarding the cortical localizations of taste and smell, the findings in this case may be regarded as confirmative of the view that the olfactory and gustatory centers are located in the inferior portion of the temporal lobe. In fact, little doubt exists as to olfactory cortical localization, but the case is not the same with regard to the centers for taste. It may, I think, eventually be demonstrated that the hippocampal convolution is the chief cortical area for taste.

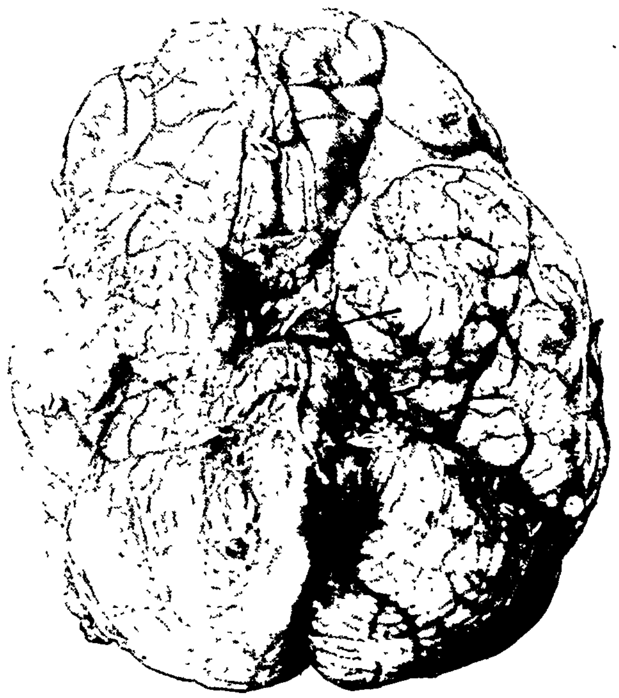

Fig. 4.—Photograph of the base of the brain, showing the tumor extending as a pointed process over the left cerebral peduncle. The line shows the position of the tumor.

So far as the recorded notes show, this patient had no visual phenomena, with the exception that when she looked in a certain direction she felt as if an attack were coming on. No sensations of light, and no hemianopsia appear to have been present. The sensory phenomena may have been due to the involvement of the thalamus and the extreme posterior portion of the internal capsule.

When this case was first seen by me, I regarded it as probably one of tumor in the early stage of development, situated in the uncinate region and especially involving the gustatory area. The further history of the case and the necropsy show that this diagnosis was probably correct, for although the glioma involved at the time of death, as has just been detailed, a much larger area of the brain, both cortical and subcortical, than is presumably connected with the representation of taste and smell, it is probable that it developed from the inferior anterior aspect of the temporal lobe, later implicating the occipital lobe, the cornua of the ventricles, and the basal ganglia, as shown by the sections made at different levels. A glioma so situated could not have been reached by the surgeon.

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So few have been the recorded cases with necropsy, in which phenomena of taste and smell have been present as the aura of the motor-epileptic seizure, or with the addition of a dreamy or other peculiar mental state as the sole or chief phenomenon of the epileptic attack, that the case given in this paper may be regarded as of considerable value.

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William Aldren Turner[16] in his monograph on epilepsy, discusses certain dream states as distinct from the dreamy state described by Hughlings Jackson as frequently showing itself as an aura in connection with crude sensations of smell and taste. While these dream states may occur more or less paroxysmally, they are especially interval phenomena. They are to be regarded, as Janet has regarded them, as psychasthenic phenomena. In them the patient suffers from a sense of unreality of the things around him, and from a distressing disturbance of his usual mental equilibrium. They are subjectively so painful at times that the patients express a feeling of dissatisfaction or worse, because they have replaced the paroxysms which, although transiently more severe, leave a clearer and firmer mental atmosphere. Such cases have been described by Crichton-Browne, Pick, Janet, Turner, and others, and must not be confounded with cases showing the dreamy state as described by Hughlings Jackson as one of the aura in the uncinate group of fits. It is probable, however, that the dream state just described, and the dreamy state of Hughlings Jackson, have something pathogenetically in common, although the psychasthenic dream state may be more dependent on the deteriorative cerebral condition of the patient, than on the discharge of a more or less localized lesion.

Turner in discussing the special sense auræ, refers to sensations of taste and smell, and epigastric sensations, with or without the dreamy state, following Hughlings Jackson in his description of the uncinate group of fits. He gives one case in which "there was described a 'smell of spring' which occurred both as the representative of the minor attacks and as the aura of the complete seizure. In the subsequent course of the case the aura was no longer present."

Spratling seems to take the ground that the epigastric auræ which he enumerates and describes in fifty cases were in some way dependent on conditions of indigestion or special disturbance in the gastrointestinal tract, in this regard differing from Sir William R. Gowers, and also from Hughlings Jackson. This way of looking at the subject has practical enticements. It helps to support the view that the epileptic attacks can be prevented by close attention to the gastric or gastrointestinal state. It is probably true that the condition of the alimentary canal, especially the presence of fermentative disorders in connection with constipation and imperfect or halted digestion, should be corrected as far as possible with the hope of doing something toward the relief of the epilepsy and especially toward decreasing the number of the seizures.

My own observation, however, inclines me to the view that the epigastric aura is only a part or at least a manifestation of the localized cerebral discharge, that it is due, in other words, to a discharge lesion which affects the cortical centers concerned with the representation or control of the sensory or motor or both sensory and motor side of the epileptic syndrome. Many facts would tend to indicate the truth of this view, among these being those which show the frequency of epigastric with gustatory and olfactory phenomena in reported cases. It is true that these gustatory and olfactory phenomena are often absent. It is nevertheless probable that sensory and motor centers concerned in some way with gastrointestinal interpretation have a more or less separate existence, and are situated in the same region of the brain as are the cortical centers for taste and smell.

In the study of cases illustrating the uncinate group of fits, especial attention should always be given to the respiratory phenomena. In the case of the patient whose history is recorded in this paper, some peculiarities of respiration in the attacks were noted. At least the patient's appearance was such as to indicate the occurrence of light asphyxia or interference with respiration and cardiac action. Her face would almost invariably turn of an ashen hue. In the severe attacks her face not only became pale as in the light ones, but also became congested.

Hughlings Jackson has especially called attention to states of slight asphyxia which are sometimes observed in the uncinate seizure. In one of the cases recorded by him the patient's face turned blue, or as he quotes the paradoxical expression of some one who observed the attack, "dark pale." He advanced the suggestion that this partial asphyxia and change of color is due to spreading of the discharge lesion in the uncinate gyrus to Spencer's respiratory arrest center, and from this center to the respiratory centers in the oblongata. He speaks of the probable occurrence of writhing movements of the arm in these uncinate respiratory attacks, saying that they are "the consequence of (the physical condition for) suffocation."

He cites from Herpin the account of a patient who had attacks with epigastric sensations, champing movements, and slow irregular movements of the arms.

He also illustrates his opinion by another case of his own. This patient, a man of 52 years, had a "funny feeling" which was not true vertigo; of this feeling he said "I can't tell what it is." This feeling might or might not have been the dreamy state. His wife knew when his attacks were coming on by a noise he made, smacking his lips as if tasting to indicate what this noise was. When the noise stopped the patient's lips turned blue; his eyes were half closed. His arms dropped limp, not stiff. He came round by drawing a long breath, then breathed easily and seemed dazed and muddled. He had a nasty taste in the mouth after the attacks. Says Jackson:

> Smacking movements of the lips, nasty taste, dreamy state, if there was one, and "turning blue" may seem at first glance to have no sort of relation to one another. I submit that they have an association in the sense that there is one discharge-lesion of some cells of the uncinate gyrus and that there is spreading of the discharge from this focus. I believe, too, that the dreamy state (which I have said often occurs in this group of fits, although perhaps not in the case just narrated) is a consequence, a very indirect consequence, of a discharge-lesion so situated.

The observations made by W. G. Spencer,[17] to which Jackson refers, were "on the effect produced on respiration by faradic excitation of the cerebrum in the monkey, dog, cat, and rabbit." This excitation which produced arrest of respiration, was of a particular spot which Spencer describes as "situated in all the animals examined to the outer side of the olfactory tract, just in front of the junction of the tract with the uncinate. And this arrest can be constantly obtained and the experiment repeated again and again under certain conditions. . . . This arrest in the monkey was nearly always in expiration, but only rarely was any active respiration seen."

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[16] Epilepsy, Study of the Idiopathic Disease, Macmillan & Co., 1907.

[17] Trans. of the Royal Society, vol. clxxxv, 1894, pp. 609 to 657.

Some work remains to be done regarding the localization of functions in the inferior portion of the temporal lobe and the orbital surface of the frontal lobe. Cases like the one here first recorded, and the others to which reference has been made, are of value in the solution of the physiologic problems concerned with these portions of the brain. The indications are all in favor not only of the location in the uncinate region of the centers for smell and taste, but also for the representation in this region and its vicinity of the sensations produced by the activities of the abdominal and thoracic viscera.

It will be seen that an epigastric sensation was a portion of the aura in the case here reported. Similar sensations have been present not only in a few recorded cases in which gross lesions have been found at necropsy in the inferior temporal region, but also in many cases of so-called indiopathic epilepsy. Other sensations, processes, or phenomena, connected in some way with the functions of the great abdominal and thoracic viscera have been recorded as occurring in patients with lesions in the part of the brain under discussion. Voracious hunger and thirst, for example, have been noted in cases of abscess and other lesions of the temporal lobe (Hughlings Jackson, Purves Stewart, and Stephen Paget).

THE RENAL ORIGIN OF VESICAL CALCULI,

WITH OBSERVATIONS ON CALCAREOUS TUMORS OF THE BLADDER.*

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The *raison d' être* of this paper is given by two observations which are apt to modify some of our diagnostic views in regard to calculus formation in the urinary tract. Both are, as it seems to me, of academic interest, as well as of more than ordinary practical importance.

The first of my conclusions was reached by my experience that during a space of four years I found among eleven cases of stone in the bladder nine in which the Roentgen method showed renal calculus at the same time. In those two, in which the renal skiagraphs proved to be negative, technical defects occurred, which made the result doubtful, the patients at the same time not giving me a chance to clear up a possible error. In none of the patients were clinical symptoms present which pointed to the presence of nephrolithiasis. In five of the cases skiagraphy was verified by the surgical operation. A preliminary report was made[1] on this coincidence, which contradicts the generally adopted axiom that concretions originate either in the kidney or in the bladder.

Now, while most authors believe that the majority of vesical calculi are originated in the kidneys, they still hold that a considerable percentage is primarily formed in the bladder. Before the Roentgen era this opinion, based on a limited amount of experience which was gained rarely on the operating table and little more frequently during autopsies, had to be accepted because there was no proof to the contrary. The repeated recurrence of vesical calculus after thorough suprapubic lithotomy in some of my patients often suggested the possibility to me that with few exceptions the kidneys were the originators of the stone at preskiagraphic times, but the only proof of this assumption would have been exploratory nephrotomy on both sides, a procedure which could not be fully justified. Now, a simple photograph can give us more precise information on this point than a surgical maneuver, which, in spite of our greatly developed technic is not an indifferent undertaking.

In investigating the nascent state of calculus I am satisfied that such solid ingredients, which under normal conditions remain dissolved in the urine, for some reasons are precipitated. Such substances are the urates of soda and ammonia, uric acid, phosphates, oxalates and carbonates of lime, cystin and xanthin of uric oxid. *A priori* it appears to be obvious that these ingredients are more inclined to be arrested in the convolutions of the renal structures than in the regular surfaces of a normal bladder. If microscopic examination of the urine were made more frequently, the number of cases in which newly formed precipitates, i. e. gravel, are carried off by the natural passages, would be much greater than we, as a rule, assume. And it is by no means essential that an excess of the ingredients mentioned should be present in order to cause precipitation, because calculus-formation is often observed when the proportions of these solid contents are perfectly normal. Of course there must be an exciting moment for precipitation. In some instances such moments can be well recognized, as, for instance, in cases of local irritation, caused by the introduction of foreign bodies which serve as a nucleus for incrustation. Such alluvial provokers may be broken fragments of a straw, of catheters, pins, thermometers, pencils or sealing wax. etc., as they are frequently found by cystotomy. Their provoking influence may be enormous, as can be proven by introducing a soft rubber catheter into the normal bladder in my operation for hypospadias. A catheter left *in situ* for not more than four days is apt to show such massive incrustations that their intravesical presence can be recognized on a skiagraphic plate.

Necrotic tissue, mucus and even blood-clots may also form a kind of magnetic attraction for the salts. In this connection I refer to my observations on tuberculous kidneys, in which calcareous foci were deposited which would be recognized on a Roentgen plate as such.[2] Here, as in the lungs, glands, etc., tubercle bacilli act as an exciting element for concrementation.

But where no such conspicuous element exists, the nature of the impetus for precipitation is to be regarded an unknown quantity, just as in the question of the formation of biliary calculi. While we know that they are originated through bacterial influence, we neither know wherein the essential element consists which makes bacteria enter the gall bladder nor what gives them the peculiar attractive influence.

The fact that bacteria are detected in vesical calculi does not prove that they are the cause of the formation. They may just as well be the consequence, at least we can say that calculi offer a most favorable soil for casterial development. The only instances in which bacteria can be proven to be etiologic factors are represented by those cases which are due to the entering of parasites into the bladder. For instance, the *Distomum hæmatoibium* of Bilharz is found endemically in some parts of Africa, and its eggs form a kind of an alluvial provocation for concrementation. The same applies to *Filaria sanguinis, which is endemic in some tropical* countries. How far the *Bacillus coli communis,* which is so much suspected of playing an etiologic part in the formation of biliary calculi, is to be considered in regard to the formation of urinary calculi can not be determined at the present time.

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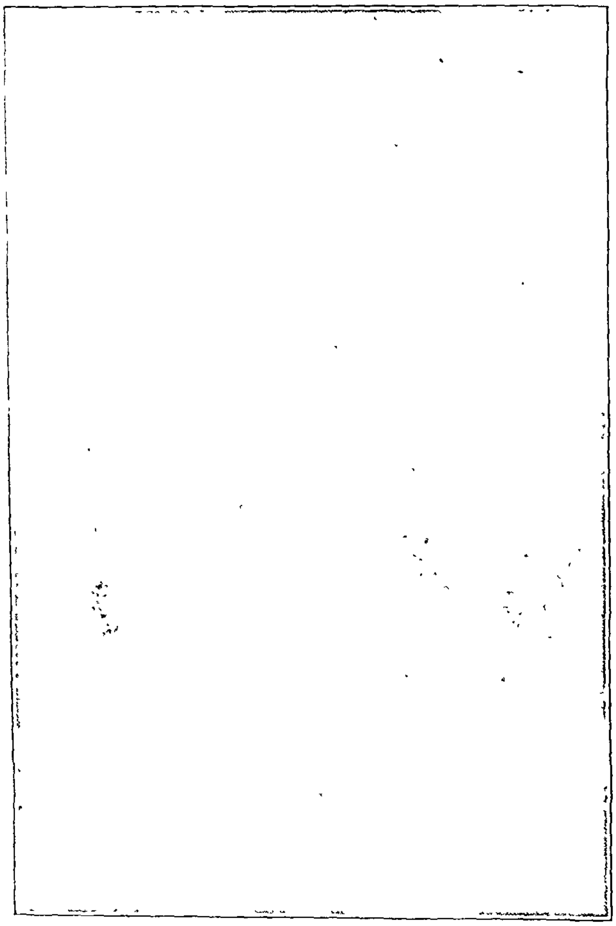
* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

[1] Annals of Surgery, December, 1905.

[2] Renal Skiagraphy, Arch. Roentgen Ray, London February, 1905.

Thus it becomes evident that nothing definite about the exciting element in calculus-formation is known except in the comparatively small number of cases in which either a solid foreign body or a parasite of a distinct character succeeded in entering the bladder.



Skiagram of the vesical and renal regions of a boy of 10 years, showing the presence of a large mulberry calculus in the bladder and a still larger *triangular concretion tightly imbedded* in the parenchyma of the left kidney. Note the small calculus near the lower surface of the large renal concretion.

But in the overwhelming majority of cases the question of whether the calculi were of renal or vesical origin could not be answered. Now, if a Roentgen examination of both renal regions were made in every case of vesical calculus, the regular recognition of renal calculus would answer this most important question satisfactorily. I have no doubt that with the exception of extraordinary conditions, like those mentioned above, the embryonic stage of the vesical calculus is in the kidney, in other words miniature calculi or gravel form in the kidney and either all or some of them descend through the ureters into the bladder, where they become the nuclei for further stone-development. Or small fragments of renal stones separate themselves and descend into the bladder to be arrested there and grow. The cases of so-called ascending infection in vesical calculus should be taken *cum grano salis,* because the pyelonephritis found may just as well be due to renal concretions which were not recognized.

Microscopic examination of the calculi does not give us any more information as to their origin, because the tender organic miniature structure which permeates the calculous mass does not show any texture characteristic for one or the other organ.

It is true that the number of my cases is small, but if to some of you my observations should not prove the renal origin of vesical calculi in a general sense, the undeniable facts brought out by them at least offer an entire new perspective of an etiologic, as well as of a therapeutic nature. In other words, after being extracted, the vesical calculus nephrolithiasis must also be treated. The experience that vesical calculus is but seldom found in women (5 per cent.) is also in favor of the renal origin of vesical calculi, since the short and wide female urethra permits of the easy escape of the small renal calculi which had descended into the bladder.

One of my most convincing cases is that of a boy of 10 years, from whom a large vesical calculus was removed by suprapubic cystotomy six years ago. The relief was complete for about a year, when the patient again began to suffer from the symptoms of vesical calculus. Three years ago I skiagraphed the vesical, as well as the renal regions, the result of which was the Roentgen plate shown in the illustration. It shows the presence of a large mulberry calculus in the bladder and a still larger triangular concretion tightly embedded in the parenchyma of the left kidney. The right kidney showed normal relations. It is of interest to note the small calculus near the lower surface of the large renal concretion, as it illustrates the manner in which smaller concretions may primarily form in the kidney to escape into the bladder, where they act as nuclei for future vesical stones. The examination of the calculi after their removal from this patient proved them to consist of oxalate of lime, the outer layers of the renal, as well as the vesical calculus, showing a smaller degree of density than the inner. As to further details I refer to my article in the *Annals of Surgery,* mentioned above, and to my experimental studies on the density of calculi.[3] My second conclusion is based on the observation that incrustations in vesical tumors are sometimes so abundant that calculus is diagnosticated. We know that before the introduction of cystoscopy, vesical calculi were often overlooked and a positive diagnosis of vesical tumor was generally made at the autopsy table only. In fact, our whole diagnostic armamentarium consisted in the steel sound, which often missed the calculus. Now we can not only feel the stone, but we can also see it. This possibility seemed to have settled all diagnostic questions at once. But important as the method is, sometimes it fails, as more thorough observation has shown us. It is true, in the great majority of cases, the cystoscope furnishes the most precise information as to the size and shape of a calculus. Besides the question of whether it be movable, free or encysted, whether there is more than one calculus and how many, and, as a rule, whether the functional disturbance, the pain and the occasional hemorrhage was not due to the presence of a tumor, can be proved. Still, as I have emphasized repeatedly in previous publications, this most useful instrument may fail when a calculus is encysted. In fact, the stone may be so deeply imbedded in a diverticulum, from which it fails to project, that its area does not present any essential changes to the cystoscopic view.

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[3] Arch. Physiol. Therapy, March, 1906.

Therefore cystoscopy, valuable as it is in itself, should always be aided by the Roentgen method, thus rendering the overlooking of a buried calculus a simple impossibility. On the other hand, the most positive Roentgen picture should not be the only guide for the operative strategy, a cystoscopic examination being necessary besides. Never before did the association of these two methods appear so important to me as in a recent case, in which the Roentgen method seemed to contradict the findings of the cystoscope.

The patient, a man of 63 years, was first examined by me March 30, 1907. Six months before that date he began to suffer from frequent and sometimes painful micturition. The urine was bloody at times. During the last two months the painful micturition had increased, especially after bodily exertion, and the signs of decomposition of urine were marked, the general condition also becoming more and more impaired. The presence of a vesical calculus was thought of, but the introduction of a metal catheter by the family physician did not produce a click. The patient was referred to a surgeon, well trained in cystoscopy then, whose diagnosis was tumor of the bladder.

When I introduced my stone searcher I perceived a feeling of resistence similar to that sometimes noticed in hypertrophy of the prostate. Rectal palpation revealed marked hardness in the continuation of the prostate, slightly toward the left. Cystoscopic examination showed the presence of an oval tumor, with a nodular surface, and of the size of a hen's egg. Microscopic examination of the urine revealed the signs of purulent cystitis besides epithelial cells with an excess of cystin.

The Roentgen picture presented a regular elliptic shadow in proportion to the size of tumor seen by the cystoscope. (The skiagram, not being easily reproducible on paper, is omitted). Especially the regularity of the outlines were identical with the shape found in calculi of fairly large size. The polymorphous epithelial cells not giving any special diagnostic information, I was tempted to assume that I had to deal with an encysted calculus. But suprapubic cystotomy performed April 2, 1907, showed the presence of a hard carcinomatous tumor, the broad base of which began at the left side of the trigonum. The whole mass was interspersed with crumbs of calcareous masses, which appeared like a skeleton surrounded by shreds of fibrous tissue. The microscopic examination, for which I am indebted to Professor Buxton, showed the calcareous matter to consist of phosphates, while the tumor tissue was fibrocarcinomatous. The renal regions gave a negative skiagram. The patient made a good recovery, but two months later the signs of recurrence became apparent and shortly thereafter the patient died from pyelonephritis. In this case the Roentgen method, otherwise so ready to enlighten us, was apt to obscure the nature of the case, which the cystoscope had recognized in its true character at the very beginning. While it undoubtedly occurs not too rarely that calculus gives the impetus to carcinoma-formation, in this instance carcinoma was the primary lesion, the incrustations being deposited while the carcinoma was growing. The large amount of the calcareous matter was remarkable. I believe it to be worth while for physicians to give these points their attention in order to clear them up further. So far the literature does not mention them.

A NEW AND RAPID METHOD OF PERINEAL DRAINAGE IN SUPRAPUBIC PROSTATECTOMY.*

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The question of choice of route in operations on the bladder is not a new one. Since bladder stones were first removed by operation, the question between the *sectio alta* and *sectio perinealis* has been the subject for heated discussion among surgeons. The radical treatment of prostatic enlargement by operation has given it a new interest. Since the perfecting of suprapubic prostatectomy by Fuller, Freyer, Fenwick and others, its adoption by surgeons in general has been very large. On the other hand, the advocates of the perineal route by the methods of Parker Syms, Proust and Young are no less staunch, though perhaps fewer in number.

Each method has its advantages and disadvantages. To my mind, and from an experience not inconsiderable with both methods, the advantages of the suprapubic method largely outnumber those of the perineal operation. When it is indicated, it can, save in exceptional cases, be completed in less than fifteen minutes. When we consider the advanced age and the debilitated condition of most prostatic sufferers, this of itself is of prime importance. The suprapubic operation does not disturb the normal relations of the perineal pockets, and what hemorrhage there is before reaching the prostate comes from the bladder wall, where it is easily controlled. The hemorrhage incident to the enucleation of the prostate is always easily checked, if the incision in the bladder is of adequate length. Here I have found the use of formaldehyd-gelatin (glutol) of inestimable service.

Through the suprapubic incision the prostate can easily be enucleated as a whole, the finger of the left hand (properly protected with gloves) forcing the gland from the rectum toward the enucleating finger. If a conservative operation is to be performed, which I regard in the average cases as a mistake, the removal of the middle lobe or bar and parts of the lateral lobes with the retention of the seminal bridge is thoroughly feasible. Wounding of the rectum in capable hands is an accident almost impossible; while in the perineal route I believe it to be a not infrequent complication, even in master hands. Postoperative sloughing of the rectum can only occur after a perineal operation.

WHEN THE PERINEAL ROUTE IS PREFERABLE.

There is, of course, one class of cases in which the perineal operation is always indicated. I refer to the small, *dense fibrous prostate, adherent* to the capsule, and in which a cystoscopic examination shows little or no intravesical projection. Here the careful dissection necessary to removal must be made with cutting instruments, and should, therefore, be controlled by the eye of the operator. In that very rare class of cases of prostatic hypertrophy in which there is concentric hypertrophy and contraction of the bladder, the perineal route is also to be preferred.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session held at Chicago, June, 1908

A comparison of the mortality statistics of the two methods of prostatectomy militates somewhat against the high operation. For this a number of factors are responsible. First, it doubtless is true that the high operation is reserved by many for the more advanced cases and those complicated, as for example, with stone. The second and more important cause for the greater mortality of high prostatectomy lies in the inadequacy of drainage as it is commonly sought to be established in violation of a fundamental principle of wound treatment. Uphill drainage is the one generally practiced after high cystotomy.

INFECTION OF THE PREVESICAL SPACE.

Since an overwhelming majority of patients requiring an operation on the prostate present an infected bladder, the results of the suprapubic operations are vitiated by the not infrequent infection of the prevesical space, and sloughing of its loose connective tissue. At best the wound is kept clean with difficulty, all mechanical devices to the contrary notwithstanding. Frequent changes of dressing are imperative and become disturbing to the patient. Not infrequently canvalescence is protracted by an annoying eczema around the wound. It is not unusual for a vesical fistula to persist for months, and in some cases it is permanent. Added to these disadvantages is the necessity of long confinement in bed with all its attendant menaces.

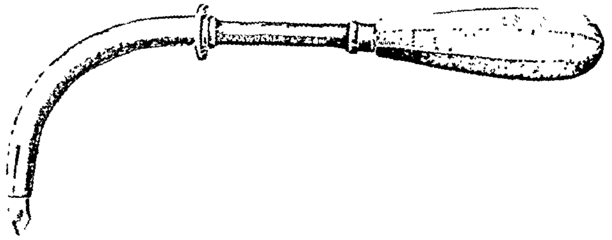

Fig. 1.—Trocar for opening the perineum after shelling out the prostate.

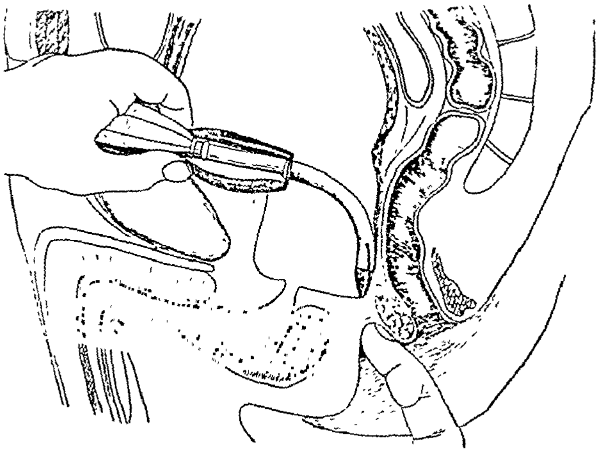

Fig. 2.—Trocar pushed through the most dependent part of the emptied prostatic pouch against a finger of the left hand placed a little in front of the anus. Bulb avoided and membranous urethra undisturbed.

The danger of a ventral hernia I believe to be largely overrated. I have seen it in only one case. In this the incision was a transverse one. To gain sufficient room the rectus was partly divided on each side.

To obviate the difficulty of draining the prevesical space, drainage may be secured by a catheter retained within the entire length of the urethra, or by a second perineal, median section (boutonnière operation). Drainage through the entire length of the urethra by a retained catheter has, in my hands, proved unsatisfactory. The caliber of the largest tube the anterior urethra will tolerate is, in my experience, not large enough for adequate drainage. The ordinary catheter easily becomes clogged by small blood clots and thereby defeats its own purpose. Furthermore, the discomfort of a prolonged retention of a catheter within the urethra is not to be disregarded.

The alternative is perineal section and drainage. While it is true that the ordinary boutonnière operation may be quickly done, it necessitates placing the patient in the lithotomy position after the prostatectomy has been completed. In this operation, as in perineal prostatectomy, there is danger of wounding the bulb and of opening the superficial perineal pocket. Postoperative hemorrhage into the scrotum and sloughing with all its attendant dangers, and protracted confinement in bed, can not be uniformly avoided. The division of the cut-off muscle incident to the median section for drainage can not but seriously retard the patient's control of urine.

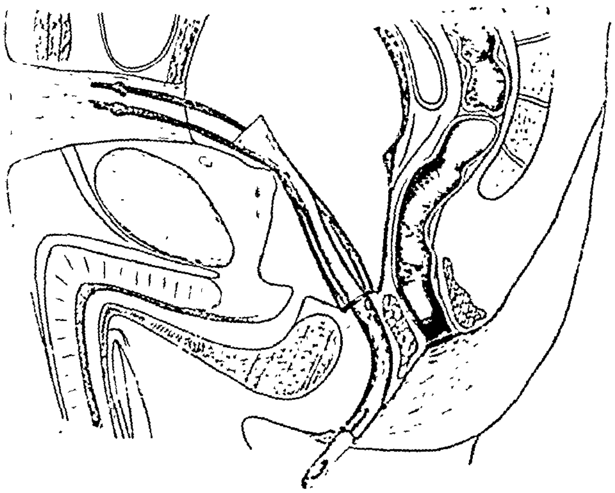

Fig. 3.—Trocar withdrawn and a large self-retaining catheter or drainage tube pushed through the cannula from within. Cannula is then removed through the suprapubic opening by the affixed tape.

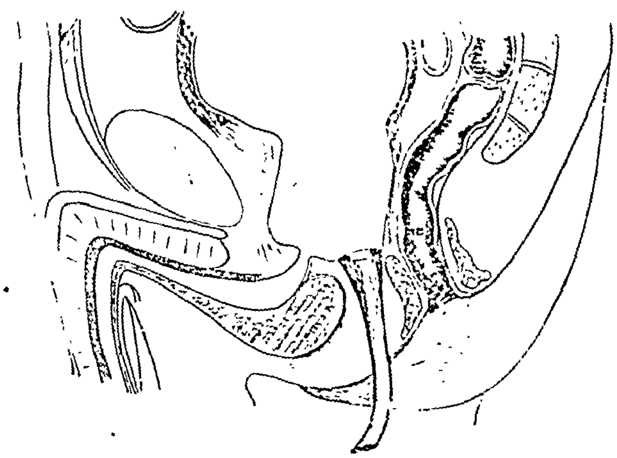

Fig. 4.—Cannula withdrawn and drainage tube placed with its upper end in the prostatic pouch and held in place by a perineal stitch.

AUTHOR'S METHOD OF DRAINAGE.

For these reasons, within the past eight months, after shelling out the prostate through an adequate suprapubic section, and after controlling hemorrhage, I have, so far as possible, opened the perineum from above by a large trocar and cannula (Fig. 1). The trocar is pushed through the most dependent part of the emptied prostatic pouch against a finger of the left hand placed a little over half an inch in front of the anus. By backward pressure the finger of the right hand protects the rectum. This is easily done without changing the position of the patient. The bulb is avoided and the membranous urethra undisturbed (Fig. 2).

The trocar being then withdrawn, the cannula projecting through the perineum, the largest self-retaining catheter or a drainage tube is pushed through the cannula from within. The cannula is then removed through the suprapubic opening by an affixed tape (Fig. 3). The caliber of the cannula is that of a thirty-six (*French*) sound. *After the cannula has been withdrawn*, the drainage tube is placed with its upper end in the prostatic pouch, where it may be fixed by a perineal stitch (Fig. 4).

This method of establishing perineal drainage takes less time than does its description. The harmlessness of the procedure is a further advantage. There is practically no danger of hemorrhage from the stab made from within, and the pressure of the rubber tube when placed in position is sufficient to arrest what little bleeding might take place. I have never seen infiltration of the scrotum by reason of opening the superficial perineal pocket, nor bleeding in any of the twelve cases in which I have resorted to this method of drainage.

I complete my operation by layer suture of the bladder wound. The abdominal wound is also closed by layer sutures, save for a very small cigarette drain placed against the sutured bladder as a matter of security. The after-treatment is precisely like that of perineal prostatectomy and the patient is enabled to be out of bed at the end of a week.

As compared with other methods of securing drainage after suprapubic cystotomy, where drainage is indicated, I believe this method to be possessed of such advantages that I confidently submit it to my colleagues for trial.

DISCUSSION

ON PAPERS BY DRS. BECK AND RANSOHOFF.

Dr. Hugh H. Young, Baltimore: Retention of urine is one of the greatest causes of vesical calculi and chronic retention should not be allowed to persist unattended. Infection of the bladder, however, is more often a cause of calculus formation, except in young men in whom the calculus is of the oxalic type. It is possible that in some instances the agglutinating action of bacteria may be responsible for the formation of the nucleus of the calculus.

Every one knows that I am more or less opposed to suprapubic prostatectomy. The perineal operation can be done just as quickly as the suprapubic. I have frequently been able to complete the operation in from twelve to thirteen minutes, and I hold that time is not such a great factor that it is necessary to do a destructive operation in order to get the patient off the table very quickly. As a matter of fact, the operation can be done just as quickly one way as another. The checking of hemorrhage is one of the greatest objections to the suprapubic route. Dr. Ransohoff speaks of the use of gelatin and other things that take a great deal of time. The use of packing in the suprapubic wound, that is in the cavity left after enucleation of the prostate is greatly condemned by Freyer of London, who holds that hot water run through a tube in the perineum is best, and is really the only styptic to be used. His statistics show that there should be left as little place as possible for the collection of fluid or the deposition of pus, and that no packing in the suprapubic wound should be used. If the perineal operation is done carefully injury of the rectum should never occur. In 200 cases I have not, so far as I know, a single case of rectal fistula to answer for. I am glad to see this acknowledgment of the disadvantage of uphill drainage. A suppurating bladder can not be thoroughly drained in that operation. From the anatomic standpoint there are certain things that would keep me from using this very ingenious instrument. I believe that the method of supplying good drainage is good, but the question is whether he has chosen a method that is free from danger. Suppose that after a suprapubic prostatectomy the urethra has been opened and there is a large cavity beneath the urethra from which the prostate has been removed. If the urethra has been removed with the prostate there is another cavity connecting with the bladder. The bulb surrounds the urethra; the perineum comes down and opens into the rectum, and then the rectum takes an acute bend forward and lies very close to the prostate and membranous urethra. This portion of the rectum has been called by the French the bladder of the rectum; it evidently has the function of holding the feces so that it will not press against the anus. In dissections I have frequently found the rectum drawn out so that it was in absolute contact with the bulb, and in some cases anterior to the bulb, especially in patients who had had a previous perineal section. It is held forward by the rectourethralis muscle, whose object is to preserve this curve of the rectum. Dr. Ransohoff's instrument, as I understand it, is introduced through the inferior part of the incision, and he tried to go posterior to the bulb. I hold that in such cases it would be distinctly dangerous to go from this point to the perineum with the danger of injuring the bulb of the membranous urethra and the sphincter, and in certain cases there would be a great danger of going through the rectum. I feel that the instrument ought never to be used except by Dr. Ransohoff, who understands its uses, its dangers and can avoid them. I think that the mortality is the one thing we bear in mind in choosing a method of prostatectomy. Unquestionably the suprapubic method is excellent in its results and it cures in desperate cases, but it is only by studying a long series of cases that we can determine which operation should be done. My experience in at least 500 cases of enlarged prostate shows conclusively that the perineal method is the simpler and is unquestionably less dangerous. In a period of almost three years I had 128 consecutive cases without a death, and every one of my patients left the hospital alive and well. Among these were 4 over 80 years of age; 23 over 75 and 46 over 70, and during that period of three years I do not think that more than 3 or 4 patients came to the hospital who were not operated on. That may be more or less good luck because since then, in a period of three months, there were three deaths. One of these patients was a severe case of pyonephrosis and one died in the ninth week after operation.

Dr. Bransford Lewis, St. Louis: The question of diagnosis is the most interesting one we can take up. One certainly can not make a correct diagnosis based on the symptoms, because these will mislead as often as they prove reliable. Five minutes of a physical examination will tell one more than a week's analysis of the symptoms. Which method of physical examination is the most serviceable, the most accurate? We must not exclude any method. Cystoscopy and radiography are both valuable and both should be used. I agree with Dr. Beck in much that he said. First, as to the feature of the searcher. It is a searcher, but it is often not a finder. In many cases of vesical calculus not only did I fail to find the calculus by means of the searcher, but those who preceded me in these cases likewise failed. An old doctor in the West carried three stones in his bladder for ten years. He was troubled with frequent urination during all this time, but no stones were found until the cystoscope was used. In another case a stone the size of a hen's egg was in the bladder without being detected until the cystoscope was used. The prostate may hide the stone from the searcher and yet it may be as-plain to the cystoscope. In relation to ureteral calculus, the same thing holds good. We must use the cystoscope and the ureteral catheter, as well as the *x*-ray in order to exclude certain failures; one or the other method may be useful, but certainly we ought not to limit ourselves to either one or the other, otherwise we may go astray. Dr. Ransohoff's description of the method made a better impression on me than I arrived at *a priori*, and I am favorably impressed with his plan. If that method does succeed, it removes one of the greatest objections to suprapubic prostatectomy, because if we take the two operations, the suprapubic versus the perineal, the execution is probably easier in the former than in the latter; but if we take into consideration the convalescence the perineal is the preferable operation because of the better drainage and the recuperation. If Dr. Ransohoff succeeds in doing away with this slower and more unfavorable convalescence from the suprapubic prostatectomy this will lessen the discomfort from the operation and make it more popular. I have favored perineal prostatectomy because of the better convalescence.

Dr. J. E. Cannaday, Hansford, W. Va.: We must admit that the surgery of the bladder is less perfect than the surgery of other parts of the body, especially of the abdomen. What Dr. Lewis said with regard to the advantage of the suprapubic prostatectomy is true. That operation is easier for the average man to perform; and, again, the results are far better because the surgeon is not so apt to have the troubles of urinary incontinence and perineal fistula, which sometimes give a great deal of trouble to the men who are not very familiar with this class of work. Of course, in the hands of some experts better results follow from the perineal operation than from the suprapubic. When one drains the bladder one gets a fluid that is not only toxic but is also often infected, and unless this fluid is all drained away infection of a large raw area and absorption from it will result. If after a suprapubic operation one drains from below, he gets the advantages of both operations.

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A PRELIMINARY REPORT.

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The class of cases about which the work has centered up to the present time have been those obscure chronic types called rheumatoid arthritis, leaving out of consideration undoubted cases of infectious origin like gonorrheal arthritis, also traumatic varieties or those due to mechanical irritation simply, and the neuropathic kinds represented by Charcot's joints. Clinical material has been obtained from the Massachusetts General Hospital and also from Dr. Joel Goldthwait's private practice, so that many persons have been seen in an incomplete way and observations made so scatteringly as to render presentation in a paper difficult.

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Enough observations have been made on six patients to establish the fact that ether does influence the arthritic process temporarily; and it is interesting to note that patients themselves first called attention to the matter by inquiring what had been done at the time of etherization for correction of deformities; they called attention to joints which had not been manipulated or touched in any manner, saying that these were entirely painless and could be moved much more freely than previously.

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Starting with a conception of the arthritic process in these patients as due to unstable protoplasm which carries on its metabolism in a disordered manner, the variations in the joints are not surprising when the exceedingly complicated nature of the anabolic and katabolic processes are considered, and changes of weather, overwork, mental worry or unusual events of many kinds may easily be sufficient to upset the exceptionally delicate balance of the metabolic processes of these persons, so that idiosyncrasies exhibited by them may have more significance than ordinarily thought, and may have to be understood before treatment can be carried out effectively and with confidence.

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The second patient is a doctor of 47 years, suffering with arthritis of nine months' duration and psoriasis of very pronounced degree. His history has the following significant points: Ether anesthesia did not diminish stiffness, pain or swelling in acutely swollen joints, but aggravated abdominal pain and caused a rise in temperature from 98.6 to 102 for several hours after etherization; while daily enemata of normal salt solution cleared the large intestine of unsuspected scybalous fecal masses. This treatment, combined with the use of fermented milk, allowed the arthritic and abdominal symptoms to subside slowly. The observations on this patient apparently seem to fix the location of the trouble in the intestines because other foci of infection were not found, the genitourinary tract being negative, tonsils having been removed and found normal, teeth in good condition, no defects in ears or lungs and acute infectious disease limited to a slight attack of grippe two years ago (1906) and typhoid fever when a boy. The relation of psoriasis to the arthritis is undetermined.

From the foregoing facts it can be seen that the large intestine was sufficiently deranged to account for all the joint symptoms; and irritations to the intestinal mucosa, which may be supposed to exist, judging from the dull uncomfortable abdominal feelings and the demonstration of unusual retention of feces, was sufficient to allow some of the multitudinous intestinal bacteria, their toxins, or their decomposition products to set up the arthritic process, as chronic gonorrheal inflammation of the urethra produces joint symptoms. Such a case as this must always be considered as lacking definite proof, however, for all sources of infection can not be eliminated. The small intestine, for illustration, which is so inaccessible for observation, may reasonably be expected to have chronic inflammations and derangements of its important function of absorption that influence arthritic processes to as important a degree as trouble with the large intestine or the throat. This case is suggestive on account of the definite findings in the large intestine which have responded to treatment. The improvement has not been a quick, clearly defined change or a complete one, but agrees with what might be expected from a slow chronic inflammation. It is evident that any work done on the intestinal bacteria will prove to be of value, and Dr. Theobald Smith has kindly agreed to have stools of arthritic patients examined under his direction at Harvard Medical School.

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These two cases represent acute exacerbations of the chronic trouble, for it has been found that the slow processes of the very chronic cases are hard to identify, and advantage has been taken of the acute stages in which abnormal conditions are most noticeable.

The first case is that of an unmarried woman of 35 years who has had a history of recurring attacks of arthritis since 3 years of age and who exhibits a very interesting reaction to ether anesthesia. Ether administered in the usual manner on a cone for fifteen minutes, when the symptoms were very excruciating, while the patient lay helpless in bed from involvement of all joints, produced nearly complete subsidence of the pain and restored motion in all joints to a noticeable degree, besides causing partial disappearance of periarticular swellings. Improvement took place within eighteen hours and transformed the swollen painful condition of several weeks' duration into a much less acute one with wrists, elbows, shoulders, hips and knee joints showing decidedly more motion and the hands losing much of their puffy edematous appearance. The amelioration of symptoms lasted two weeks and then the joints partially relapsed again into their previous state of stiffness.

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in Atlanta and one or two of Dr. Goldthwait's patients have shown a favorable tendency during its use; but the explanation that it acts by preventing intestinal putrefaction does not seem wholly adequate, as there may be other conceivable properties which it possesses in addition. For example, the milk may be unusually well absorbed by the small intestines of these patients or it may influence their digestive processes through its lactic acid. No proof of such action exists, yet it seems too much to attribute the entire action to inhibition of the growth of anaerobic organisms in so complex an organ as the intestines, because the facts do not agree completely enough with this theory.

The cases are given in detail as follows:

Case 1.—*Patient.*—Schoolteacher, aged 35, single, a small, slightly built woman, nervous and ambitious, who had overworked and had recurring attacks of arthritis that involved nearly all joints, especially those in all the extremities.

Family History.—The patient's father had five attacks of acute rheumatism after he was 45 years old which left the joints entirely free in the intervals between attacks except for a slight restriction of the knee motions; insomnia was thought to be an etiologic factor by the patient. The mother is living and has had no rheumatism except some stiffness in the hands. Two sisters are well. One sister has tuberculous kidney and lungs. One maternal aunt, two first cousins and the paternal grandmother died of pulmonary tuberculosis. There were no other joint troubles in the family beyond the father's rheumatism.

Personal History.—The patient's arthritis began at 3 years of age. She had scarlatina and measles when a child, pleurisy in 1900, influenza in 1897, carbuncle in 1903 and sore throat three times. Tonsillectomy was performed in 1906. She had acute neurasthenia in 1900, which lasted two years. She had curettage of the uterus done in 1906 to relieve dysmenorrhea and with hope of improving the articular symptoms. The patient worked her way through college and while there was under severe mental strain which she tried to overcome and forget by continuous application to the courses of study. She generally slept well but occasionally had insomnia. Her appetite was capricious and always poor. Her regular diet was supplemented by raw eggs, two to four a day. The total quantity eaten was always below the average. She used no stimulants. The patient had occasionally attacks of indigestion associated with nervous upsets. Her bowels were rather constipated and menstruation was normal except for considerable pain.

Arthritic Symptoms.—These followed an injury which the patient sustained at 3 years of age; they began with an acute attack in the shoulders, knees and elbows that lasted the entire winter; at 7 years she had a second attack of arthritis which lasted about a year and affected the spine, legs and arms. Up to 18 years of age she had five acute attacks; in 1898 she had an attack involving all joints more or less; in 1900 when broken down nervously from overwork she had also acute exacerbations of arthritis and since then she has spent most of her time in a wheel chair and at hospitals. The patient returned home from Boston in the autumn of 1907 improved sufficiently to be able to walk and feeling the best that she had felt in ten years, yet still somewhat troubled with a stiff ankle and elbow. The last exacerbation came on gradually during the winter months of 1907-08 with pain gradually developing which the patient purposely disregarded until sudddenly all her joints became involved in an acute inflammation which came on within a few days and spread rapidly from the left ankle and right wrist throughout the entire body. For four or five weeks previous to admission to Corey Hill Hospital (April, 1908) the patient was prostrated with pain, fever and acutely swollen joints.

General Examination.—This was made in April, 1908, during the period of acute exacerbation. The patient was a pale, sick looking, poorly nourished woman of small stature. She had sustained a marked loss in flesh since the autumn of 1907. Practically all her joints, including the sternoclavicular and sternocostal articulations were involved in an acute inflammatory process which was subsiding and most noticeable in both elbows, wrists, hands, knees and feet. Redness was visible only around the right elbow; swelling was present in the hands, wrists, elbows and feet, slight in degree except in the periarticular swellings of the fingers which still were badly swollen, edematous and hot. There was considerably atrophy of the interossei muscles of hands and moderate sweating of the hands. Tenderness was exquisite in the finger tips and toes so that bed clothing could hardly be borne. Pain on movement was excruciating in the elbows, wrists, knees, ankles, left shoulder and right hip, while the right shoulder and left hip were considerably less painful; the spine was slightly affected and a sitting posture was assumed voluntarily as a relief from lying down. The sternocostal and sternoclavicular joints had been swollen and painful, making respiration difficult. There was no free fluid in the knee joints. The left elbow was in a plaster cast. The patient lay in bed, unable to sit up without assistance and not able to feed herself. Her temperature on admission to the hospital was 99; it had been 99 to 101 for several weeks.

Blood Examination.—This was made in April, 1908. Hemoglobin was 90 per cent.; leucocytes, 5,000. Five cubic centimeters of blood, withdrawn from a vein and inserted into 200 c.c. neutral broth showed no growth in five days when grown under aerobic conditions at a temperature of 37 C.

Teeth.—Dr. Edward Briggs examined the patient's teeth in November, 1906. They were in good condition. He reported that there was nothing in her mouth that would cause any general infection.

The ears and mastoids were normal.

Throat.—Dr. Goodale made an examination in 1906 and reported: "There are several points of granulation of the throat in the region of the old operation but nothing that suggests an accumulation of pus or a source of infection."

Pelvic Examination.—This was made by Dr. Wolcott in November, 1906. She reported ulceration of cervix with some discharge. Smears from the discharge examined by Dr. Rogers showed no diplococci and very few pus cells.

Urine.—This was normal during the summer of 1907; in April, 1908, it was clear, contained no sediment, was acid, sp. gr. was 1.025, contained no sugar or albumin, a few epithelial cells, no casts or pus cells. Indican was present in moderate degree.

Stools.—Examined repeatedly during the summer of 1907 these showed normal color, dry scybalous consistence and a foul odor. They were of small amount and passed regularly with cathartics daily; the bowels moved eighty times during a period of seventy days at the hospital. Microscopic examination showed approximately the usual percentage of meat fibers, fats and fatty acids, with considerable vegetable débris, the most marked characteristics being the small amount, foul odor and lumpy nature, with no evidences of inflammation.

Bacteriologic Examination.—This was made in April, 1908, and showed a moderate number of Gram positive bacilli in smears from the stool; cultures made under anaerobic conditions with pyrogallic acid and soda yielded a predominant growth of colon type of bacteria developing on neutral hydrocele agar in the thermostat. Streptococci and strict anaerobes could not be distinguished on the plate cultures. Twenty subcultures taken from suspicious looking colonies proved to belong to the colon type.

Fermented Milk Treatment.—For three weeks during the summer of 1907 'Kihlac' milk was tried without any result. The milk was prepared by fermenting it, after pasteurization with a special lactic acid ferment called 'Kihlac' and feeding it to the patient in quantities of two or three pints each day. The patient's condition at that time had been much improved by out of door treatment and general hygienic measures so that no great change could be anticipated and no apparent effect on the joints was noticed; the milk was so unpalatable as to take away the appetite and cause nausea.

Reaction to Drugs.—Acetylsalicylic acid (aspirin) has generally controlled moderate joint pain very well. Morphin administered freely during acute stages was said to have relieved the difficulty with respiration and to have influenced the joints in an unusual degree; but when given during less acute stages caused nausea and upset the digestion without benefiting the joints especially. Quinin was said by the patient to be borne very poorly and caused acute swelling of the hands at the single time it was given. Ether taken at the time of the pelvic examination in 1906 caused improvement in the symptoms for one week after, and when taken again for removal of nasal spur in April, 1908, produced improvement for two weeks, as already described.

X-ray Examination of Hands.—Characteristic atrophic changes of moderate degree, especially in the carpal bones of the right hand, which were considerably thinned. There was very little destruction of cartilage and no displacements of bones.

Case 2.—*Patient.*—A physician, 47 years of age, married.

Family History.—The patient belongs to a long lived family. His father is 82 years old, healthy and robust. His mother died at 69 years of age with meningitis. Two sisters are living and well, and no others in family. There is some nodular rheumatism in the paternal uncles, but no rheumatic trouble in the mother's family.

Personal History.—The patient had typhoid fever of moderate severity at 14 years of age, and influenza of slight degree in 1906. A psoriasis began eight years ago, came on gradually and has persisted to the present time (1908) attaining unusually extensive distribution on trunk, scalp and extremities. There has been some chronic inflammation of throat for the past eight or nine years which has been relieved since tonsillectomy in March, 1908. For eighteen years he worked very hard at general practice with no vacation until two years ago (1906), but was able to get his regular amount of sleep until the past year, in spite of a great deal of night work. He had no sickness that incapacitated him; lately, however, he gave evidence of fatigue chiefly in the way of an unnatural irritability and the sensation of a constricting band about the head, also the feeling of the necessity for a rest after a long case of confinement occurring on top of a hard day's work. He is temperamentally neurotic but is under excellent control. His digestion has generally been good and his meals reasonably regular; the bowels were all right up to the time of arthritic symptoms. Three or four years ago a disagreeable uneasy feeling began to be noticed in the abdomen which did not annoy the patient much during the day but at night became a constant dull ache around the navel that could be relieved by lying prone in bed. The pain never became severe nor associated with nausea; considerable distention was constantly present. Dizziness of severe degree frequently came over the patient while lying in bed until finally he consulted a doctor who gave him Epsom salts daily and ultimately relieved the abdominal symptoms and dizziness. He had no trouble with his ears or genito-urinary system; occasional colds in the winter; he has had some vasomotor disturbance in the hands on the beginning of cold weather.

Arthritic Symptoms.—Two or three years ago (1905-1906), the patient noticed a gradually developing stiffness of the back and legs for a few minutes on getting out of his carriage after a long drive. In September, 1907, there came very suddenly a red painful swelling in the second left toe but no fever at that time; in two weeks the right knee swelled and was painful and tender to touch. There was no fluid or redness about the joint. In this state the patient kept on for two months until early in December, 1907, when the jaw, left shoulder and slightly later, the little finger and wrist of the right hand became involved. The onset was sudden and very painful, and was attended with a degree or so of fever for two or three days. Since then the toes of the left foot and both ankles and left hand have been included among the affected joints.

The patient entered Corey Hill Hospital in March, 1908.

General Examination.—The patient was a fairly well developed and poorly nourished man, with hair quite gray. He walked with considerable limp in right leg; got up from his chair stiffly and moved guardedly.

Joints.—Jaw motion was so restricted that the tongue could with difficulty be protruded between the teeth. The shoulders, elbows and wrists seemed normal, both in motion and appearance. The three outer fingers on the right hand showed considerable spindle-shaped swelling without heat or redness. There was some restriction in motion and a slight swelling over the ulnar styloid of the right wrist. Both ankles were slightly swollen. The toes at the juncture of the phalanges and metatarsals were considerably swollen on the right foot and to a less degree on the left foot. The ankle joint motions were not particularly restricted. There was considerable villous thickening around the tendon sheaths below both internal and external malleoli. The right knee was two centimeters larger than the left one in circumference, with moderate degree of capsular infiltration; there was no fluid or heat, or restriction of motion. There was considerable atrophy of the thigh; the spinal motions were free.

Tonsils.—Tonsillectomy was performed March 14, 1908, by Dr. Mosher. The report on the microscopic condition of the tonsils is as follows: "1. Unbroken capsules which appear in the sections as continuous bands of fibrous tissue. 2. A marked decrease in the lymphoid elements, with a corresponding increase of fibrous tissue. 3. A very thick epithelium lining the crypts, backed by an unusually thick propria. 4. Bacteriologic examination of the contents of the crypts and of sections of tonsils showed nothing unusual. Cultures from the crypts contained *Staphylococcus albus* and *aureus* and a few streptococci. Sections show staphylococci and fusiform bacilli in the crypts. The histolog. structure of these tonsils warrants a belief that they were not a source of infection."

The teeth were in good condition. The ears and mastoid were negative.

Blood.—Hemoglobin was 90 per cent., leucocytes 4,500. Two cubic centimeters of blood taken from a vein of the arm and introduced into 200 c.c. of neutral bouillon showed no growth in thermostat in eighteen hours or after five days (April 17, 1908). Five cubic centimeters of blood taken from a vein of the arm and introduced into 50 c.c. of neutral hydrocele bouillon (one part hydrocele fluid and two parts neutral broth), and grown under partial anaerobic conditions (pyro and soda), showed no growth in eighteen hours or after five days (April 29, 1908).

Urine.—This was examined by Dr. Oscar Richardson. There were 47 ounces in twenty-four hours. It was clear, pale and acid. Sp. gr. was 1.007. There was no sugar or albumin and little if any sediment. There were 5.6 gm. of urea. Indican was present in small amounts in a second examination made April 14, 1908.

Abdomen.—This was symmetrical, soft and tympanitic. There was no visible peristalsis or distention and no muscle spasm. There was a slight tenderness on deep pressure in the neighborhood of the navel, and a palpable mass in the cecum before the bowels were thoroughly evacuated, which then disappeared. The skin of the abdomen was extensively covered with continuous blotch of psoriasis girdling the waist.

The heart and lungs were negative.

The temperature was normal.

The urethra was normal.

There was no stricture of the rectum. The prostate was negative; the prostatic secretion was not examined.

Bowels.—After the patient's admission to the hospital, bowels moved daily with considerable irregularity, and, although hard fecal masses were retained in the cecum, there were two or three loose evacuations each day. Two movements per day were the average frequency. The stools were of solid consistency generally, and of normal quantity and color and with usual fecal odor. Microscopically, no appreciable evidences of inflammation were made out; no pus cells or excessive amounts of desquamated epithelium; no blood or large amounts of mucus; there was the usual percentage of meat fibers and fats.

Bacteriologic Examination.—April 14, 1908. The predominant bacteria, developing anaërobically on hydrocele agar at 37 C., belonged to the colon type of organisms; no coccal forms were found in twelve tubes from which subcultures were made. Each agar plate showed four or five large white opaque, roughly spherical colonies developing in the depths of the medium which when transplanted to lactose agar and grown under aerobic conditions soon died out before their cultural characteristics were determined. Six subcultures were examined microscopically and all exhibited an interesting variation in morphology to which Dr. C. A. Herter of New York City has already called attention, namely, a variation from bacillary to coccal form. Surface growth on lactose agar in the air showed large, long bacilli while in the depths of the same medium long chains resembling streptococci predominated, and twenty-four hours after the subculture had been made from the original colony grown under anaerobic conditions on hydrocele agar, all stages from typical coccal to long bacillary forms could be made out. This was not a mixed culture because all the other tubes showed the same condition, and it is interesting because it shows that dependence can not be placed to a great extent on the appearances of fecal smears as indicating the relative proportion of coccal forms.

A second examination made April 29 showed that the predominant bacteria belonged to the colon type with no streptococci or anaerobes when grown under conditions as described before. The bacillus found in the previous examination disappeared for some reason, possible on account of the fermented milk treatment.

X-Ray Examination.—The process was shown to be an infectious arthritis. There were no changes in cartilages; the periosteum of the shafts of the metacarpal and the basal row of the phalangeal bones was thickened; there was no atrophy of the bones. The bony trabeculae in the carpal bones and in the cancellous ends of metacarpal and phalangeal bones were obscured and blurred by the infectious process.

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The effect of ether on this patient was strikingly different from the other case cited. In this instance the symptoms were made distinctly worse instead of being markedly improved, as with the other person.

Two other observations, which seem to be extremely significant and which strengthen the arguments for a metabolic type of arthritis should be mentioned before concluding this report. Both cases occurred in Dr. Goldthwait's private practice, the first being a woman showing atrophic changes in the joints, whose arthritis entirely cleared up during a pregnancy and returned again two or three weeks after childbirth. The second person was a middle-aged man who was entirely relieved temporarily of his atrophic arthritis during his convalescence from lobar pneumonia. Additional evidence is furnished by Dr. T. S. P. Strangeways,[3] who reports similar cases showing improvement in arthritic symptoms during pregnancy that returned after childbirth. These facts are reasonably explained by the changes in metabolism which occur in pneumonia and also during pregnancy, for it is well recognized that marked variations in nitrogen excretion are demonstrable in such cases, and suggest a similarity to the improvement observed by ether anesthesia with its accompanying increase of nitrogen excretion. Although no conclusions can be reached at the present time, yet observations already made tend to differentiate a class arising from deranged metabolic processes rather than from chronic infections. These cases exhibit atrophic bone changes and are improved by various agents, as ether, infections and pregnancy, which stimulate the cell protoplasm to increased normal activity.

This report is a very incomplete one, but enough has been shown, it is hoped, to indicate the nature of the work and the organization which permits cooperation between clinical and purely scientific men. Dr. Charles G. Weld, of Boston, has started the research on a very satisfactory financial basis by furnishing sufficient money to pay for salaries of bacteriological and chemical laboratory assistants, special nurses, diets, x-rays, photographs and other incidental expenses.

EARLY TREATMENT OF SOME SUPERFICIAL CANCERS ESPECIALLY EPITHELIOMAS.

BY PURE RADIUM BROMID RATHER THAN OPERATION OR X-RAYS*

FRANCIS H. WILLIAMS, M.D.
BOSTON.

In 1900 Dr. William Rollins of Boston suggested the use of the radiations from radium salts as a therapeutic agent and put capsules containing radium into my hands. The salts then obtainable were not powerful enough to be efficient. To Dr. Rollins, nevertheless, so far as I am aware, is due the credit of being the first to realize the probable value of these radiations as a therapeutic agent.

Nearly five years ago I obtained about two grams (120 mg.) of pure radium bromid and about one hundred grams of the impure salts, and soon after published some tests made with them and clinical results.[1] The pure salts I have used in tubes or capsules containing 50 mg. and 10 mg., respectively, but the cases I shall describe have been treated ordinarily with capsules containing 50 mg. These have been used both by Dr. S. W. Ellsworth and myself at the Boston City Hospital, as well as for my own patients.

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Sometimes in the so-called treatment by radium the preparations used have been weak and inefficient.

Before using radium it seemed to me important to make a study of the beta and gamma rays. My experiments showed that, determined by the fluorescence produced, there was fourteen times as much of the beta as of the gamma rays given off, and that the beta rays could be excluded by an aluminum plate of suitable thickness, which, however, allowed all or nearly all of the gamma rays to pass. Clinical tests indicated that the beta rays had the chief therapeutic value. They do not penetrate deeply, but may eventually reach the deeper portions of a new growth by first destroying the outer portions layer by layer, and then attacking the parts that in the beginning were more than half an inch from the surface.

Before dismissing the gamma rays from consideration, it should be said that they have a value in some painful affections, for example, in certain forms of facial neuralgia. Care must be taken when using them to exclude the beta rays or the patient is liable to be burned by the latter while subjected to the action of the gamma rays. Burns have been reported from France when patients were treated for neuralgia without excluding the beta rays.

Such a small quantity of radium as 50 mg., or less than a grain, can not conveniently be used to treat a disease that extends over a very large area as well as can the x-rays. In a general way, it may be said that radium is better adapted to somewhat limited areas rather than to the larger ones, which may be easily covered by the x-rays at one exposure.

The rays from radium issue spontaneously and continuously, and as far as we know are uniform as to quantity and quality, so that it is easily possible to give an exact dosage. This is in marked contrast to the conditions which prevail in regard to the x-rays.

It is not my intention to suggest that treatment by radiations from radium—or more accurately by the beta rays—makes other forms of treatment obsolete, but only to indicate that certain of the patients hitherto treated by such remedies as caustics, operation or x-rays may advantageously be treated by radium instead.

In applying radium the capsule, containing 50 mg. of the pure salt, at the end of a handle a foot or more long, should be held over each area to be exposed for a period varying from one-half to three and sometimes four minutes. With this amount the exposures should be made from one to three times a week, less often after healing has begun, according to the disease to be treated. For the sake of cleanliness the capsule should be covered with a new rubber cot for each patient. No pain accompanies the treatment and there is no sensation except that produced by the contact of the rubber. Improvement in suitable cases follows usually within two or three weeks and sometimes within a shorter period.

I shall now present some of the results obtained in a series of cases[2] which have been subjected to the action of pure radium bromid. Certain of them were exposed to both radium and x-rays, but I have omitted those in which the x-rays probably played an important part. The cases have included lupus erythematosus, lupus vulgaris, trachoma, psoriasis, acne, eczema, keloid, tuberculous dactylitis, vernal catarrh, chronic ulcer of the leg, warts, rodent ulcer and epithelioma.

Before considering the results obtained in these two latter diseases, a few words in regard to certain of the others may be of interest.

In *lupus erythematosus*, radium was not of any service in two cases, but a third patient seems to be improving.

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There is, I believe, another opportunity for the use of radium to which I shall only refer in this paper, and that is the treatment of certain glandular structures. It seems to me that the attempt might well be made to treat adenoids by means of radium.

In seventeen cases of *rodent ulcer* treated by radium in this series, the lesions in eleven cases healed; in one it healed, but recurred later; in four it did not heal; and one is still under treatment. The average duration of the disease in these cases, before treatment was begun, was ten years. I believe that better results might have been obtained if patients had come earlier and if the radium had been used more vigorously.

Of the cases of *epithelioma* in this series there were sixty-nine, and the success that followed the use of radium in this largest and most important group has been the chief reason for the presentation of this paper. The average duration of the disease before treatment was begun was four and one-half years. In fifty-six cases the lesion healed; in one it did not heal; four are under treatment, and eight patients discontinued treatment; but these last, with one exception, were all doing well at that time.

These sixty-nine epitheliomas do not include pre-epitheliomatous growths. They are divided as to sites of the disease as follows:

	Total	Healed	Not healed	Under treatment	Discontinued treatment
Lower lip............	14	11[*]	..	1	2
Lid	9	6	..	1	2
Face	24	20	1	1	2
Auditory canal......	1	1	0	0	0
Ear	1	..	..	0	1
Hand	1	1	0	0	0
Nose	19	17	..	1	1[†]
	69	56	1	4	8

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[2] Since this series of cases was tabulated I have been using radium on the tonsil of a patient with results which are thus far satisfactory; also for a woman with a new growth one and a half inches long and more than a half inch in diameter, surrounding the urethra; an operation in her case would mean life-long disability.

[*] In one of these eleven lip cases a gland, just under the angle of the jaw, became somewhat enlarged four months after the lip had healed and has been *removed* since this paper was read. Prof. F. B. Mallory reported it to be cancerous. There has been no recurrence on the lip. This case shows that the action of radium was local and indicates the importance of its early use. When desirable, radium may be supplemented by suitable treatment of the neighboring glands.

[†] A feeble man, 76 years old, who died suddenly while under treatment after being out on a very cold day. All the others, except one, were doing well when they discontinued treatment.

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In seventeen cases of *rodent ulcer* treated by radium in this series, the lesions in eleven cases healed, in one it healed, but recurred later; in four it did not heal and one is still under treatment. The average duration of the disease in these cases, before treatment was begun, was ten years. I believe that better results might have been obtained if patients had come earlier and if the radium had been used more vigorously.

Of the cases of *epithelioma* in this series there were sixty-nine, and the success that followed the use of radium in this largest and most important group has been the chief reason for the presentation of this paper. The average duration of the disease before treatment was begun was four and one-half years. In fifty-six cases the lesion healed, in one it did not heal, four are under treatment, and eight patients discontinued treatment, but these last with one exception, were all doing well at that time.

These sixty-nine epitheliomas do not include pre-epitheliomatous growths. They are divided as to sites of the disease as follows:

	Total	Healed	Not healed	Under treatment	Discontinued treatment
Lower lip	14	11*		1	2
Lid	9	6		1	2
Face	24	20	1	1	2
Auditory canal	1	1	0	0	0
Ear	1			0	1
Hand	1	1	0	0	0
Nose	19	17		1	1†
	69	56	1	4	8

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[2] Since this series of cases was tabulated I have been using radium on the tonsil of a patient with results which are thus far satisfactory; also for a woman with a new growth one and a half inches long and more than a half inch in diameter surrounding the urethra. An operation in her case would mean life-long disability.

*In one of these eleven lip cases a gland just under the angle of the jaw, became somewhat enlarged four months after the lip had healed and has been removed since this paper was read. Prof. F. B. Mallory reported it to be cancerous. There has been no recurrence on the lip. This case shows that the action of radium was local and indicates the importance of its early use. When desirable radium may be supplemented by suitable treatment of the neighboring glands.

† A feeble man 76 years old who died suddenly while under treatment after being out on a very cold day. All the others except one were doing well when they discontinued treatment.

As the length of time that has elapsed after healing is a very important consideration in estimating the value of a remedy, I should state that of the fifty-six healed patients, twenty-three have been well for two years or more, nine of these twenty-three for more than three years, and two for more than four years. Recurrence took place in two of the twenty-three cases, in one a year and in the other two and one-half years after healing, but yielded to further treatment.

Let me describe one case:

> This patient had a typical epithelioma of the lip about one-half inch in diameter in the mucous membrane of the lower lip not far from the median line. It had begun slowly with a little roughening and irritation of the mucous membrane; this spread and later the disease progressed more rapidly. Various powders and other simple forms of treatment had been used for more than a year after the first symptoms appeared. At the end of this time the patient came to me and was treated with radium and all other treatment was omitted. The exposures were given twice a week for six weeks. Three days after the first exposure the crust came away, leaving a rough surface containing holes as if roots had been drawn out. A week later these openings had filled up and the induration had diminished. After ten days the ulceration was less indolent in appearance. After fourteen days there was a clean, oval ulceration with a narrow, contracting circle of scar tissue around the edge. After seventeen days the appearance seen was that of a healing ulceration and the induration had nearly if not quite disappeared. All this improvement took place after only five exposures of three to four minutes each, and was so rapid that some improvement was noticeable at every visit. When healing was complete, at the end of six weeks, the mucous membrane of the lip where the epithelioma had been did not differ in appearance from that of other parts, but there was a slight depression as a result of the loss of substance.

On the other hand, the rays from radium may at first make the diseased area look worse. For example, one of my patients had a wart on the side of the nose which had been torn off and irritation and ulceration followed. The application of radium caused an increase in the redness, swelling and discharge. The treatment, however, was continued, and after a few exposures the discharge and swelling subsided, the induration disappeared and the ulcer healed rapidly. It seemed as if the indurated base had to be got rid of before healing could take place.

In one case, an epithelioma of the face yielded to six exposures of one to two minutes each. This case was of a year's duration when treatment with radium was begun.

In epitheliomas of short duration the improvement seems to be prompt. By this I mean that the sensation and soreness diminish or disappear, the diseased area becomes less congested and less aggressive, and the disease appears to be arrested in its progress in two or three weeks or sometimes less. Considering, first, that epitheliomas may begin to improve promptly, second, that they have healed well when properly treated with a suitable amount of pure radium bromid, and, third, that, speaking generally, epitheliomas that have not been operated on seem to do better when treated with radium than those on which an operation has been performed, and then radium treatment begun, I believe that radium should be employed in early epitheliomas before any other treatment is used.

Anything which might give rise to an epithelioma, such as a wart which has been irritated or torn off, or a small intractable spot of apparent eczema, or other starting points of epithelioma which do not heal in a few weeks or months, should be submitted to treatment by radium.

It is interesting to note that surgeons and their relatives have come for this painless treatment rather than submit to operation, and thus far they have done well. It is probable that when patients realize that there is a painless remedy, they will submit themselves for treatment earlier than did those in the series which I have briefly outlined (average duration in the cases of rodent ulcer ten years, epitheliomas four and one-half years); and we may hope, too, that they will come for treatment for such things as do not heal readily and might lead to some serious growth. Under such circumstances the results should be even better than those which I have thus far had. But even now unless one has watched such a series of epitheliomas as I have described, and seen so many of them heal and in many cases leave so slight a scar that the site of the disease is not easily recognized, it would be difficult to believe that such benign results could follow the use of a remedy that can not be seen or felt.

Treatment by radium should be begun early and Nature must do her share. Healing under the most favorable circumstances may take place after less than a dozen exposures; in other cases a much greater number will be necessary, as in treating old and feeble patients or patients with a poor circulation the remedy must be used cautiously in order to do good only. In such patients healing goes on slowly, or they may have so little vitality that they do not respond, so that after the radium has done its work of destroying the diseased tissues healing does not take place.

Experience and judgment will guide the physician in giving the amount necessary to cause healing without overexposure which would result in irritation and a burn, and with care no harm will be done. At the same time, if radium is timorously used good results will not follow or will come only after unnecessarily prolonged treatment.

CONCLUSIONS.

1. The radiations from radium are uniform in quality and quantity and thus this remedy has a great advantage over the *x*-rays in efficiency and safety.
2. The gamma rays from radium are useful in some cases for relieving pain. They have great penetrating power. When they are used as an analgesic the beta rays should be excluded or the patient may be burned, because the proportion of gamma rays is so much smaller than that of the beta rays that the exposure must be much longer when the gamma rays are used, to make them effective.
3. The beta rays from radium are the useful rays in the treatment of rodent ulcers, epitheliomas, and other superficial diseases. They can be applied in the mouth and other cavities.
4. Radium should be used early, and in suitable amount and strength. The treatment is painless and leaves the least scar.
5. Radium does not produce as good results in cases in which an operation has first been done or scraping, caustic, or other irritating treatment has been used, or the *x*-rays have been applied.
6. Improvement follows the use of radium more promptly in many cases than the use of the *x*-rays and the total duration of treatment by radium, though sometimes long, is much shorter than with the *x*-rays. In some cases success has followed the use of radium where treatment by the *x*-rays has failed.
7. A surprisingly large proportion of external cancers, especially epitheliomas, have healed and remained

healed for some years under treatment by radium and my experience thus far indicates that for certain cases of external new growths it is a better remedy than those previously at our command.

8. Recurrences follow all methods of treatment, and radium is no exception, but so far as present experience goes this is unusual and they have yielded to further treatment by radium.

9. The disadvantage of radium is its cost to the physician.

505 Beacon Street

CLINICAL ASPECTS OF TUMORS OF THE MEDIASTINUM,

WITH CONSIDERATION OF THE FINDINGS IN FOUR CASES.[*]

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The records of hospitals and postmortem rooms show that mediastinal neoplasms, whether primary or secondary, are uncommon. Of more than 7,500 autopsies on patients dying from all causes at the Marine Hospital, Cronstadt, one in fifty exhibited mediastinal growths. It has been estimated that one medical patient in 10,000 shows mediastinal tumor of some form. Of more than 25,000 general hospital patients at the University of Michigan Hospital, there have been, perhaps, a dozen cases of tumor of the mediastinal structures. It is extremely interesting, therefore, that within the past year and one-half there have come under observation four cases in the Medical Clinic presenting strong presumptive evidence of mediastinal growth and, in addition, two in which the diagnosis was suspected. Perhaps this increased ratio is largely due to the increasing perfection of clinical aids in the examination of patients generally.

The four cases furnishing the material for this communication are interesting from many standpoints. One of them, a case of chronic cyanosis with erythremia, is unique. The diagnosis in all instances was presumptive, so far as absence of postmortem material is concerned, but sufficient evidence is at hand to make the conditions reasonably certain. All the patients were adults. There were three males and one female. The youngest patient was 43, the oldest 67. They came to the hospital for such ailments as heart disease, asthma, chronic bronchitis, Bright's disease and laryngeal obstruction. Three of the patients appeared to have affections primary in the thorax. In the female the process was evidently secondary. Two patients had rapidly-spreading, malignant growths, and death supervened within less than a year after they came under observation. In the remaining cases the neoplasmata are apparently of slow growth and the patients have been affected for some years.

REPORTS OF CASES.

Case 1.—This presents the clinical picture of chronic cyanosis, with variable erythremia, but without evident splenic enlargement; attacks of asthmatic dyspnea; albuminuria; involvement of the mediastinal tissue as shown by symptomatic, physical and radiographic examination.

Patient.—There was sent to the medical clinic in January, 1907, an American laborer, aged 43, with complaints of difficulty in breathing, palpitation, frontal and occipital headaches, chronic cyanosis, dropsy and general weakness.

History.—The family history of the patient was negative, with the exception that his mother recently had an amputation for a thyroid tumor in the right tibia. Up to the age of 30 the patient was in good health. At this time he began to have asthmatic attacks, coming on at irregular intervals, usually at night. The patient's habits were good, and there was no history of specific disease. About six years before entering the hospital, he had what he termed a severe attack of "asthma," at which time his "wind was shut off sudden" by a "pressure just at the top of the breast-bone," and he became unconscious. He remained so for a few minutes. He had palpitation of the heart for some time afterward. About four years since he noticed blueness of his face, hands and feet, with variable swelling. He took medicine and believed that the blueness almost disappeared. It did not again become marked until September, 1906. At this time palpitation and cardiac distress, together with blueness, were so marked that he consulted a physician, who informed him that he had heart disease. He was put on treatment, but relief was only temporary. His blueness increased, becoming especially marked when he worked or when he was excited; palpitation and dyspnea became more troublesome. He began to have severe frontal headaches, was frequently dizzy and his eyes became prominent. A feeling of thoracic constriction was almost constant, particularly when he lay down. This feeling was most apparent in the region of the nipples. A blow on the chest or pressure downward from above the sternum produced a sensation of "smothering." There was no difficulty in swallowing, and no marked gastrointestinal disturbance.

Examination.—This revealed a man of medium build, with thin panniculus. There were no pronounced evidences of emaciation. Over the face and neck, particularly the nose, chin, lips and ears, there was a startling degree of cyanosis. The hands and feet were moderately blue, particularly so when the patient stood or allowed his arms to hang down. Then the cyanosis came on almost instantly and the peripheral veins were markedly prominent. When the patient lay down the face and neck were slaty blue. The cyanosis was less marked after he had lain for a few minutes. Exercise and psychic disturbances deepened the color perceptibly. The palate and tongue were deep purple. The eyes were very prominent, especially the right eye, that eyeball protruding 6 mm. further forward than the left. The conjunctivæ were suffused, the right more than the left. The pupils were of moderate size, equal and active. The external jugular veins were injected and prominent. They filled from above. There was moderate pulsation of both carotids, rather more on the right. The thyroid was negative. There was no tracheal tug. Over the trunk the skin had a bluish cast. There was a fine punctate eruption over the chest (medication?). The thorax moved *en cuirasse*. The inspirations were shallow and not accompanied by much abdominal movement. There were no visible Litten's shadows, but there was slight inspiratory retraction in the lower axillary spaces. The respiration rate was not increased when the patient lay quiet. It was rapidly increased on even slight exertion. The heart beat was faintly visible in the fifth interspace, well inside the nipple. It was not increased in rate. Palpation of the lungs was negative.

Percussion is indicated in Figure 1. The liver dulness was low, the spleen barely made out. There was an abnormal substernal dulness, with an atypically situated precordial outline. The areas of dulness did not change with change in position of the patient. Outside the areas of actual dulness there was a poorly defined zone of diminished resonance. Traube's space was tympanitic in a small area in front. The liver dulness began at the tenth rib in the mid-scapular line, posteriorly.

Auscultation of lungs: There was diminished vesicular breathing throughout the entire *right side to the fifth rib.* Below, the inspirations were sharp and blowing, the expirations soft and prolonged. Over wide areas there were few piping râles. On the left there was bronchovesicular breathing to the second rib, with increased vesicular breathing below. The râles were more numerous and more pronounced on the left than the right. The voice, both spoken and whispered, was negative. The examination of the back added nothing to the picture.

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[*] From the Clinic of Internal Medicine of Prof. George Dock.

[*] Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908. Because of lack of space the article is here abbreviated by the omission of a review of the anatomy and the symptom-complex, but the complete article appears in the Transactions of the Section and in the author's reprints.

Auscultation of the heart: All sounds were heard with difficulty. The first sound at the apex was heard best two fingers' breadths inside the mid-clavicular line in the sixth intercostal space. The sounds over the base were best heard in the fourth left space and beneath the adjacent sternum. The first sound at the apex was soft and somewhat impure, the pulmonic second sound was moderately accentuated. The radial pulse was slow, of moderate size, and fuller on the left than on the right. There was moderate sclerosis of the radials. The blood pressure varied with the side tested. On the left, the pressure was, systolic 156 mm. Hg, and the diastolic 109 mm. On the right the systolic pressure 146, the diastolic 98, with the Erlanger apparatus 12 cm. cuff.

Abdomen was somewhat distended in the region of the navel. The liver was felt with difficulty at the end of inspiration. The spleen was not palpable in whatever position the patient lay. There was no palpable mass in the abdomen. The glands were negative.

Eyes: There was moderate conjunctival injection, the retina and head of nerve were edematous, there was marked venous engorgement, no hemorrhages (Professor Parker).

Nose: There was partial occlusion of the left nasal fossa. The larynx was negative.

Blood examination: Erythremia was noted from the first. At entry, as seen in Chart 1, the red cell count was 6,450,000. The hemoglobin was 100 per cent. plus. The white cells were about 6,500. The blood was very deep red, flowed slowly and was extremely viscous. It was spread on a slide with great difficulty. There was nothing peculiar about the shape or the size of the red cells. No nucleated reds were seen. The differential white count was as follows: Small lymphocytes, 14.8 per cent.; large lymphocytes, 3.8 per cent., polynuclears, 67.6 per cent., eosinophile polynuclears, 3.8 per cent.; mast cells, 1.6 per cent., and degenerates, 8.4 per cent. Further consideration of the blood appears below.

Urine: This contained a moderate amount of albumin, with many small, finely and coarsely granular casts and numerous cylindroids.

Fluoroscopic examination: A diffuse, non-pulsating shadow lay above the heart. It was especially dense about the root of the lung and the great vessels. It could be followed up into the neck. The heart was downward and inward. The diaphragm was low down on both sides, especially on the right.

Radiogram: The fluoroscopic findings were confirmed. The mass evidently filled the mediastinum and was almost as dense as the heart. No definite lines of pulsation could be seen. The tumor appeared to occupy both mediastinal spaces, lying in close approximation to the heart, lungs and their adnexa. Here and there points of greater or less opacity might be seen in the lungs and pleura. There appeared to be more infiltration to the left than the right.

Subsequent History.—The patient was kept quiet for a few days, and in view of the high blood pressure and cyanosis, put on purges and nitroglycerin. He improved and was soon up and about. His remaining history to date is particularly interesting. It may be roughly divided into two periods. The first was a stage of moderate cyanosis, with erythremia, in which the patient was generally comfortable and able to do light work. There were days when the cyanosis was rather marked, and when feelings of fulness, with difficult breathing, were complained of. This was especially the case when the patient worked hard or became excited. There was little nocturnal dyspnea. The blood pressure was generally lower than at entry, either because of the rest or potassium iodid, or both. It gradually fell to an average of systolic 96 and diastolic 75 mm. Hg.

The second phase of the history comprised periods of extreme cyanosis with more or less pronounced erythremia; marked dyspnea, bearing usually some relation to exertion or excitement, associated with unconsciousness, stupor or apathy; disturbances in vision; paroxysmal headaches, albuminuria and gastrointestinal symptoms.

Marked Clinical Manifestations.—1. Cyanosis. As stated, the patient was always cyanotic. There have been, however, since he came under observation, seventeen "attacks" of extremely pronounced cyanosis, general in character, but especially involving the head, neck, upper part of the thorax, and the extremities. At these times the color of the face and the extremities was a dusky, slaty purple, while over the trunk the skin had a bluish cast. On several occasions there was slight nose bleed. There was never bleeding from the mucous surfaces. Hematuria was not observed. With the occurrence of the cyanosis, the patient suffered extreme dyspnea. The respirations were greatly accelerated and the inspirations audible and slightly crowing. The expirations were prolonged, and sometimes accompanied by an expiratory grunt. In these attacks the voice was hoarse, or merely a low pitched whisper. Sensations of pressure in the substernal region, with feeling of suffocation, palpitation with or without precordial distress were complained of. The dyspnea sometimes lasted for but a few minutes, then again persisted for half an hour or as long as the greater part of a day. The attacks were frequently followed by days of added cyanosis and prostration. During the attacks the heart rate was accelerated, going as high as 130 when it had previously been in the neighborhood of 60. There were never evidences of actual cardiac incompetency. The peripheral vessels were greatly injected but positive venous pulsations were not observed. Auscultation of the lungs in the acute attack revealed an almost entire absence of breath sounds, with few high pitched musical râles. The eye grounds generally showed extreme engorgement of the retinal vessels with marked edema of the fundus. The right eye was sometimes very prominent, and there was a noticeable increase in intraocular tension. The conjunctivæ were markedly suffused, particularly the right one.

2. Erythremia. Coincident with the attacks of added cyanosis and dyspnea, there were generally noted changes in the red cell count and the hemoglobin. The white cell count was sometimes altered, in proportion. These blood changes were usually in proportion to the severity of the "attacks," but not always so. As will be seen from Chart 1, there were periods of intense cyanosis with red cell count not greater than 6,500,000. On several occasions there were days of pronounced cyanosis, without acute dyspnea, when the red cell counts ranged from 7,000,000 per c. mm. to as high as 9,000,000. Differences in count were noted, varying with the part of the body from which the blood was taken. For example, the blood taken from the toe in one attack gave red cells 7,780,000; that from finger, 7,200,000; while that from the ear was 8,020,000 cells per c.mm. The hemoglobin was not estimated at this occasion. On another test, when the cyanosis was not very marked, the finger gave 6,260,000 red cells per c.mm. with hemoglobin 136 per cent. (Miescher); that from the toe 6,860,000, with hemoglobin 156 per cent., while the blood from the ear was 7,010,000, with hemoglobin 144 per cent. It will be seen that the hemoglobin appeared to vary with the vascular distance from the heart, rather than with the actual increase in the red cell count. The highest blood counts were recorded during the attacks of most acute dyspnea and cyanosis. There were six occasions on which the red-cell count ranged from 7,250,000 per c.mm. to as high as 9,260,000 per c.mm. On one occasion there was a period of ten days when the count was above 8,000,000 per c.mm. The white cell count was not always proportionately increased. (Chart 1.) The counts were never much higher than 10,000. The hemoglobin estimations could not be made with the ordinary Tallquist scale. With the Miescher apparatus, and with dilution to twice the usual extent, the estimations always ran considerably above 100 per cent. (Chart 1.) The variations were from 105 per cent. to 156 per cent. The relation of the increases to the erythremia and the attacks of cyanosis and dyspnea is well shown in the chart. During the period of prolonged cyanosis already mentioned with counts above 8,000,000 per c.mm., the average hemoglobin reading was 132 per cent. (Miescher).

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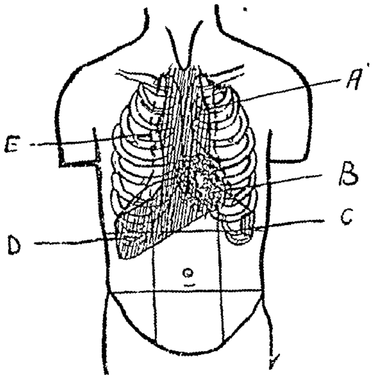

Fig. 1.—A, atypical thoracic dulness; B, cardiac dulness; C, spleen; D, liver; E, area of diminished resonance.

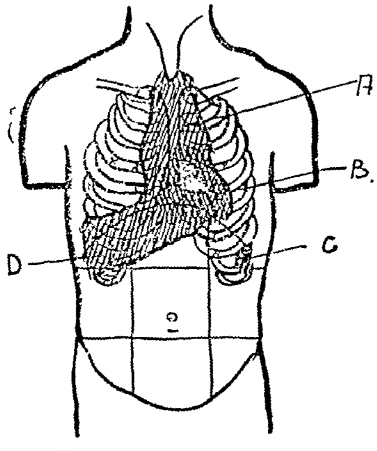

Fig. 2.—A, atypical thoracic dulness; B, cardiac dulness; C, spleen; D, liver.

Otolaryngological examination: Both cords abducted to the *cadaveric position and were slightly retracted.* They showed moderate injection. On phonation, the right cord was negative; the left showed imperfect approximation to the vocal process posteriorly (Dr. M. L. Cushman).

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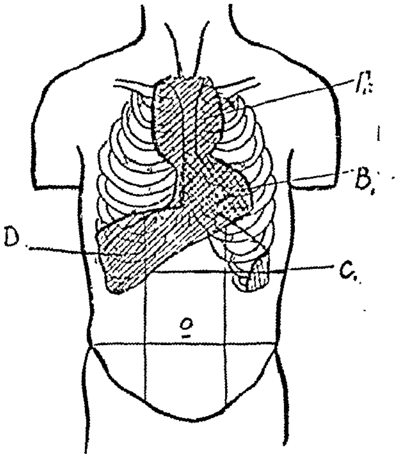

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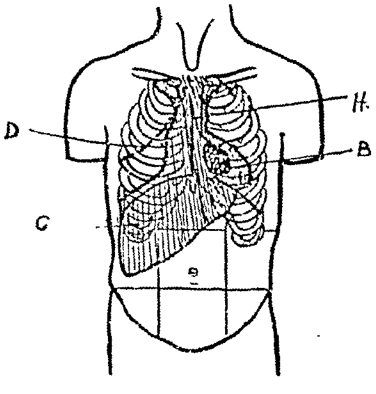

Fig. 4.—A, atypical thoracic dulness; B, cardiac dulness; C, liver; D, upper limit of pleuritic effusion.

Reflexes: These were negative; there was marked tenderness along the posterior tibial nerve.

Blood: The red-cell count was 4,750,000; the white-cell count, 5,200; the hemoglobin, 100 per cent. (Tallquist).

Urine: This was negative.

Stomach: There was mucous gastritis with diminished acidity, but good motility.

Fluoroscope: The heart appeared hypertrophied. Occupying the mediastinum was a mass of about the same degree of opacity as the heart. It was continuous with the heart outline, and extended upward to the neck. In its upper part, it extended more to the left than to the right. Low down it filled in the cardiohepatic angle.

Radiogram: This confirmed the fluoroscopic findings. The mass was especially thick about the great vessels and the root of the lung. There were no evidences of pulsation.

Subsequent History.—The patient was put on purges and potassium iodid. He has shown improvement in blood pressure, which has dropped as low as 160 systolic, and in his subjective symptoms. The crowing breathing, the nocturnal dyspnea, and the morning nausea have become less marked. He is still cyanotic and complains of the sensation of tightness in his chest. It is aggravated by excitement or hard work. The tumor appears to be enlarging into the posterior mediastinum and to the left. A distinct area of dulness may be percussed in the left back along the spine from the level of the inner end of the scapular spine to the eighth dorsal vertebra. In this region there is marked increase in the vocal resonance and suggestion of tubular breathing. The crowing inspiration is still marked, but not so evident as when the case first came under observation. There is no dysphagia, and no obstruction or pain when the stomach tube is passed. The patient says that he has coughed up or vomited up some "stuff" streaked with blood, but we have never been able to get any of it for examination in the clinic.

CASE 3.—*Patient.*—A woman, aged 64, likewise showed chronic cyanosis as a pronounced clinical manifestation. At first, there was some polycythemia, the red-cell count reaching 6,640,000, but this was transitory.

History.—The patient had had a carcinoma of the left breast removed three years before entering the hospital. She came to us on account of pain in the left side of the chest, swelling of the neck, with "rushing of blood" to the head, weakness, nervousness and edema of the extremities. She presented a negative family and personal history with the exception of a peculiar, eczematous skin affection in early adult life. The breast tumor was noted fifteen years ago. She had it removed by a popular "cancer-plaster cure." It recurred with increased rapidity of growth, and three years since she had a radical operation on the breast and the left cervical glands. Shortly after the operation, the patient noted burning sensations in the wrists and the hands. Six months ago, she observed that the veins of the upper part of her chest and her left arm were growing more prominent; there were also soreness and a sensation of fulness in the upper part of the thorax in the median line. The head began to feel full and the neck to enlarge. She thought that it was now two inches larger than it had been six months ago. The left arm began to swell slightly. She had lost twelve pounds in weight in two years.

Examination.—The patient was a rather heavy-set woman, nervously inclined. She was very restless and loquacious. Her face and neck were scarlet, with a bluish tinge over the ears and the lips. Over the upper thorax and the left arm the superficial veins were prominent and enlarged. The superficial venules were dilated so that the entire region has a distinctly bluish cast. Both forearms were puffy-looking, especially the left, where there was slight pitting on pressure. The left forearm was also cyanotic, especially when dependent. The glands in the left axilla and the lower cervical group on both sides, particularly on the left, were enlarged. The eyes were moist, the lids swollen, the palpebral aperture small. The pupils were negative. The voice was rather hoarse. There was no tracheal tug.

Thorax: This was short and broad. The bony prominences were hidden by fat. There was no Litten's shadow on the right; it was fairly well seen on the left. There was slight increase in tactile fremitus below the right clavicle. The left infraclavicular space filled better than did the right. The percussion (Fig. 3.) revealed an easily made-out mass occupying the upper sternal region, and extending rather more to the right than the left. The remainder of the thorax was negative to percussion. On auscultation the breathing was diminished on the left to the second rib and increased over a corresponding area to the right. Below it became quiet on both sides. Over both infraclavicular spaces the spoken voice had a distinctly nasal twang, which was more marked on the right.

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Fluoroscope: A mass of rather globular shape filled the superior and anterior mediastinal regions. It could not be said to pulsate.

Radiogram: This confirmed the fluoroscopic findings. The mass was distinctly more to the right than the left. It was in close connection with the great vessels and the root of the lung. The heart appeared somewhat enlarged.

Subsequent History.—On account of the heart weakness, the patient was put on digitalis. She became rather more comfortable, but her subjective and objective symptoms and signs did not improve. She was at length lost sight of, but recently word reached us of her death. The autopsy was not secured.

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Examination.—The patient was tall, spare, emaciated. There was a trace of cyanosis over his lips and his finger tips. The face was dusky pale, with enlarged venules over the cheeks and the nose. There was an old conjunctivitis with eversion of the lower lid. The thorax was long and deep. The lower interspaces retracted on the left in the sixth and seventh axillary spaces, and slightly in the sixth on the right. The heart impulse was diffusely seen below the left nipple. There was poor thoracic movement on the right side, generally fuller than the left. The vocal fremitus was absent on the right below the third rib. The percussion is indicated in Figure 4. There was abnormal substernal dulness extending upward below both clavicles more on the right than the left. The heart was displaced or enlarged to the left. Absolute dulness began at the third space on the right and was movable. There was moderate Grocco's sign in the left back. Auscultation revealed quiet breathing on the right below the clavicle, and absent breathing below the third space. There was rather marked nasal bronchophony, without egophony. On the left both breath and voice sounds were exaggerated. The heart sounds were weak and impure.

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Subsequent History.—The patient grew gradually worse. The fluid accumulated rapidly. He was again tapped and again the fluid returned. His cardiac weakness and his cough returned with increasing vigor after the tappings, and he barely reached his home before he died.

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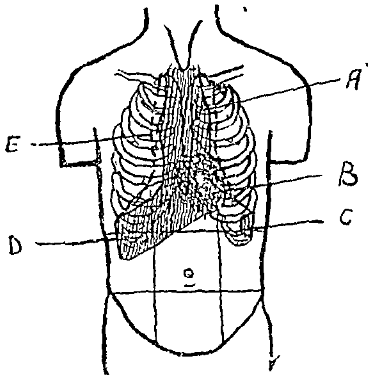

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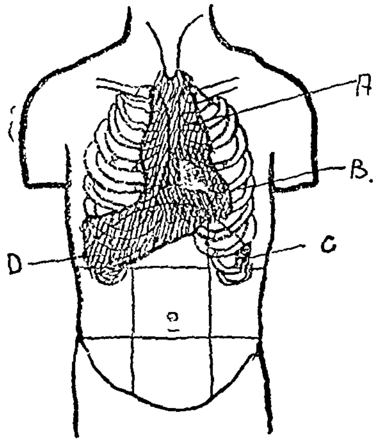

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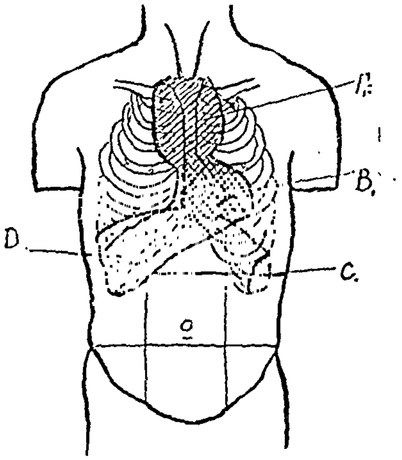

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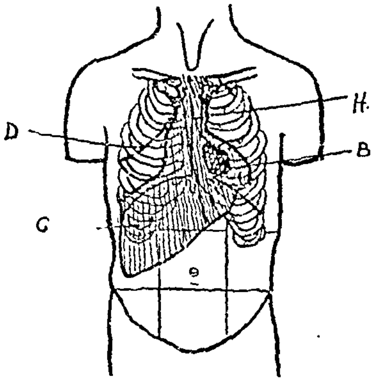

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Without postmortem material the nature of the tumor masses in these cases can only be surmised. There is abundant proof that in Cases 3 and 4 the growths were carcinomatous. In Case 1 the process seems to be either a slowly growing sarcoma or a luetic involvement of the mediastinal tissues. No evidences of syphilis are discoverable, however. Case 2 is perhaps more clearly luetic than Case 1. There is no distinct history of syphilis, but the patient has reacted fairly well to specific medication.

A few words might be said as to the probable position of the growths. In Case 1 the symptomatology and the radiograms point to a rather general involvement of the entire mediastinum. The second case presents more evidences of involvement of the middle space of the inferior mediastinum than of a general involvement. In Case 3 the anterior and superior spaces were doubtless the seats of the greater degree of infiltration. In the last case the inferior space appeared to be the seat of the larger portion of the growth, with secondary involvement of the right pleura. The so-called "cancer cells" in the pleuritic effusion were a valuable diagnostic aid as to the primary cause of the fluid.

Treatment.—When the nature of the growth is evidently malignant, as in Cases 3 and 4, only palliative measures are indicated. These are governed by the symptoms. Care should be exercised in the tappings, when effusion exists. Too rapid evacuation of fluid, or the withdrawal of too much of it, may be followed by severe and exhausting cough, albuminous expectoration and collapse. Small, localized tumor masses may in picked cases be treated with *x*-rays with benefit. None of our patients appeared to improve under the exposures. The treatment should be given only by skilled operators, inasmuch as the long-continued exposures, which are evidently necessary, may give rise to severe burns and serious blood and kidney alterations. In our series Patients 1 and 2 appeared to improve somewhat under anti-syphilitic medication. If there is even a possibility of lues iodids may be tried in full doses. The high blood pressures are relieved by bleeding or, where this is impossible, by nitroglycerin or the nitrites. Daily purging is also of service, although this should be done with care, as frequently patients become exhausted from the free evacuations. The periods of extreme dyspnea (as in Case 1) are relieved by morphin and atropin hypodermically and the administration of oxygen. In a few instances it seemed that the oxygen exerted a favorable effect on the erythremia. When the dyspnea is continued through several days, absolute rest, with tincture of belladonna internally, make the patient more comfortable.

Operative interference might be advised in cases in which the tumor mass is well localized, in which proper arrangements can be made for maintaining intrathoracic pressure and where an operator of the highest skill is at hand. Doubtless, with the improvement in diagnostic methods and more extended operative procedures on the thorax, surgical measures will become more general. The situation of the mediastinal tissues will, however, place certain barriers in the way of promiscuous attempts at enucleation or dissection of mediastinal neoplasmata.

In conclusion I wish to express my thanks to Drs. M. L. Cushman, George Slocum and Sobei Ide for aid in collecting data herewith presented, and to Dr. B. D. Niles of Grand Ledge, Mich., and Dr. G. A. Seaboldt of Jackson, Mich., for permission to examine two of the cases.

DISCUSSION.

Dr. Thomas D. Coleman, Augusta, Ga.: I have been impressed with the fact that the disease in question is very rare among negroes. These people are subjects of syphilis, tuberculosis and adventitious growths in general; but I have never seen a case of mediastinal tumor occurring in a full-blooded negro. I have seen two cases in mulattos. The other cases that I have seen occurred in whites and all the patients were males, aged somewhere between 30 and 60. One was a distinct case of carcinoma. The patient had had the pectoral muscles removed and finally succumbed to the disease, and the autopsy confirmed the diagnosis, cancer of the mediastinum. The chief point of interest in my cases, outside of the pressure and other symptoms, is that but one of my patients died. I had one case, the diagnosis of which was not verified, in which there was a distinct paralysis of the left vocal cord, which was supposed to be due to a gumma. The patient was placed on specific treatment with the result that recovery followed. The diagnosis in this case was fairly well established but could not be confirmed by the *x*-ray, as its use had not been discovered at that time, about eighteen years ago.

Dr. Alexander Lambert, New York: Some years ago I had a case that puzzled me very much. The lesion turned out to be a sarcoma which grew at the junction of the vena azygos major and the superior vena cava. The pressure symptoms were peculiar. When the patient was lying down he became blue from the clavicle up, the color of the rest of the body remaining normal; but when the patient sat up his face was white and he became blue from the clavicle to the hips. Whether lying down or sitting up the legs remained normal all the time. This tumor acted no doubt as a sort of ball valve. The diagnosis was made by working out the circulation of the chest wall. A primary sarcoma of the right ventricle of the heart was the original lesion. I have seen a number of mediastinal tumors at Bellevue Hospital, and what struck me as most interesting was that the symptoms came on paroxysmally, with a cough sometimes like that of whooping cough and without any apparent reason or cause of excitation. The pain and dyspnea came on paroxysmally. One symptom on which some stress was laid by the old English writers is occlusion of the right innominate vein—pathognomonic of mediastinal tumors. This does not occur in aneurism.

Dr. Robert H. Babcock, Chicago: It was my fortune last summer to see a case of mediastinal tumor, the antemortem diagnosis of which was substantiated post mortem. The patient had been treated for pulmonary tuberculosis. This illustrates the fact that a physician may mistake for pulmonary tuberculosis a disease which produces a definite tumefaction of the front of the chest. It had been suggested to me, even before I saw the patient, that consumption might be present; but when I laid my hands on the front of the chest it was clear to me that this was not a case of pulmonary tuberculosis. Instead of a depression of the chest, a characteristic of the phthisical habitus, the upper portion of the chest was distinctly bulging, showing intrathoracic pressure.

Another interesting phase of the case was that the patient had been given mercury for syphilis for a long time. Certain sores in the mouth were thought to be mucous patches. The antisyphilitic treatment was pushed to the limit, but without benefit to the patient. A careful investigation of the history of this case revealed the fact that these sores were due to the mercury. This case was very instructive to me, because it showed conclusively the necessity of the physician entering carefully into the history of the case, and also the necessity of a clear discrimination between the symptoms of the various intrathoracic diseases, since if a diagnosis of intrathoracic disease is to be made, one should bear in mind the fact that it can not always be made by the physical signs alone.

Dr. John Francis Herrick, Ottumwa, Iowa: The diagnosis in these cases is very important. I have seen a case of aneurism of the posterior wall of the aorta in which the entire cavity of the aneurism was filled with a solid mass of fibrin before the patient was first seen. There was only a small opening through which the blood got to the aorta and left subclavian. The case appeared much like a tumor of the mediastinum, with pressure on the aorta. There was an absence of bruit. No information could be obtained from the history of the case. The diagnosis of a solid tumor was made, but an old aneurism, with its cavity filled with a solid mass of fibrin, was found at the postmortem.

Dr. Frank Smithies, Ann Arbor, Mich.: I am not quite certain whether my first case did not present quite as many symptoms of the Vaquez-Osler malady as it did of intrathoracic pressure. It becomes very interesting to consider the possibility of the blood changes being secondary to the long-continued intrathoracic pressure, with consequent hyperplasia of the bone marrow. Dr. Lambert's remarks about the paroxysmal character of the symptoms of mediastinal growths are interesting. With regard to the first case reported, the pupils were equal and active under ordinary conditions. During the paroxysmal attacks of dsypnea the right pupil became distinctly dilated, showing a certain involvement of the sympathetic. Mediastinal tumors probably might be differentiated ante mortem by radiograms.

NON-SURGICAL TREATMENT OF UTERINE DISPLACEMENTS.*

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Operative gynecologic surgery has made such strides during the past few years that the practice of minor gynecology has been almost lost sight of. This fact becomes evident when one notes the number of surgical contributions to the relief of uterine displacements and the scarcity of contributions that deal with non-surgical treatment. And it is made still more evident when one converses with recent graduates in medicine, who know practically nothing about mechanical methods of correcting displacements, and who speak as if such therapeutic measures had passed into oblivion.

This condition is undoubtedly due to the advance that has been made in gynecologic surgery, which cures the displacements of the uterus much more rapidly and far more certainly; but we should remember that there are some patients who object to being operated on, and others whose physical condition makes operation unsafe (as, for instance, patients with exophthalmic goiter, with diabetes mellitus, etc.), in many of whom properly adjusted mechanical support will entirely relieve the symptoms caused by a displaced uterus. Moreover, we should remember that no operation is entirely free from risk. If we can in a given case achieve the desired symptomatic result by an entirely safe method, then it should be for the patient to decide whether she prefers the palliative measure, with a possibility of permanent cure and without any of the risk entailed by surgical intervention, or the operation with its attendant risk, resulting almost certainly in cure without the necessity of wearing a pessary.

I do not think it can be disputed that in some instances it requires more skill to adjust a pessary properly than it does to do a simple abdominal operation, since the former requires good judgment and more experience than can be gained in the one or two lectures that students get on this subject in colleges.

The normal position of the uterus varies with the condition of the bladder and the rectum; both being empty, the uterus is in anteversion with flexion. It is freely movable and changes its position according to the degree of distention of the bladder and rectum. We thus see that the uterus may become retrodisplaced or retroverted under certain physiologic conditions; but this is not a pathologic displacement, and it does not become such unless the uterus permanently remains in retrodisplacement. Before B. S. Schultze's classical publication on the pathology and therapeutics of uterine displacements, the perfectly physiologic anteflexion of the uterus was considered by most gynecologists to be a pathologic condition, and hence women were unnecessarily subjected to treatment with a pessary, the kinds of which in those days were very numerous.

The displacements which are most frequently amenable to treatment by mechanical supports are of two kinds—posterior displacements, and descensus of the uterus, either with or without more or less descensus of the vagina.

In posterior displacements the rectouterine ligaments have lost their tone and are longer than normal; if a pessary be adjusted properly, they are made so tense that they bring the cervix backward toward the posterior pelvic wall, and thus the body of the uterus is placed in anteposition, provided no pathologic process has caused a thinning out (an atrophy) at the juncture of the cervix with the body of the uterus, as in some instances of extreme retroflexion of long standing. The round ligaments which are elongated in such cases, are relieved of the weight and get an opportunity to regain their normal condition. Thus I believe these patients are sometimes entirely cured of the displacement.

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The posterior displacements may be divided into (1) retroposition, (2) retroversion, and (3) retroflexion, in each of which varying degrees of displacement exist. Retroversion usually coexists with retroflexion. It is also commonly found that a retroversioflexion is associated with more or less descensus of the uterus.

Retropositions of the uterus are *not likely to cause* any symptoms. In these the anteflexed form of the body of the uterus is retained. The organ as a whole is simply situated farther back toward the sacrum than *usual*.

With retroversions there is associated more or less induration of the uterine walls, which is most marked at the junction of the body with the cervix. When the induration passes off, the body of the uterus will by its gravity become flexed to a greater or less degree, thus changing into a retroversion with flexion. In some cases of retroflexion the flexion angle becomes very acute, so that the uterine body may be below the level of the external os. Again, in some instances of long-standing retroflexion the junction between the body and the cervix may become so atrophied that no pessary can hold the uterus anteposed, the body invariably tipping over the upper bar of the supporter.

The majority of retroversions and retroflexions are acquired; in these cases treatment is more productive of good results than in those of congenital origin. Furthermore, it is the cases of acquired displacement that give rise to symptoms. *Congenital cases do not often* cause symptoms, and when they do, the displacement is seldom found amenable to treatment with pessaries. In a patient with a congenital retroflexion the uterus is somewhat smaller than normal and is not fully developed. Frequently the vagina is too short and too small in caliber to admit the adjustment of a pessary, and on the anterior vaginal wall, in the median line, is found a very fine band-like condition, associated with extreme tensity and density of the exterior cervical connective tissue, so that even should we succeed in anteposing such a uterus the anteposition will be only temporary and the uterus will soon again assume its pathologic position. This condition may be considered as one of the causes of sterility.

Retrodisplacements which are fixed by inflammatory adhesions are not suitable for treatment by pessaries, nor is such treatment indicated in any case complicated *by an acute inflammation of any part of the pelvic* structures or of the pelvic contents. In all such cases the inflammation must first be cured.

A pessary should never under any circumstances be adjusted before the uterus has been placed into physiologic anteflexion. If this can not be done, the treatment is not suitable to the condition. The replacement should be effected by bimanual manipulation. Only in exceptional instances, and then with the utmost anti*septic precautions, may a sound be used as an aid*—as in treating very corpulent women and those with very rigid abdominal parietes, but then only if we have ascertained that no inflammatory process is present in the *uterine adnexa or the pelvic peritoneum. The object of* a pessary is to hold the displaced uterus in position after the displacement has been corrected, by making tense the folds of Douglas and thus bringing the cervix backward toward the posterior pelvic wall. The tension on the round ligaments is then relieved, and they have an opportunity to regain their normal tone and to exercise again their functions as the anterior supporting ligaments of the uterus.

Some instances of retroversion with flexion are relieved by the adjustment of a pessary, even if the pessary does not hold the uterus in anteposition, but simply brings it on a higher plane in the pelvis. It has seemed to me that this relief is brought about by correcting faulty circulation in the pelvic organs, which again was caused by the backward displacement with more or less descensus of the uterus.

In instances of pregnancy with retroflexed uterus, I usually make use of the knee-chest position for the purpose of reducing the displaced organ, unless I readily *succeed in replacing it in Sims' position. One gets* much aid in the air-pressure in the knee-chest position and is more easily enabled to sweep the gravid uterus past the sacroiliac synchondrosis. When the organ has been reduced, a proper sized pessary should at once be adjusted.

If the physician is specially trained in the method devised by the late Thure Brandt, and has the time and the patience, and if the patient is willing to undergo such a course of *treatment, very much may be accomplished* with it. It is particularly to be recommended when the uterus is fixed by adhesions, more especially old puerperal adhesions. It should be avoided in all cases of salpingitis, especially of gonorrheal origin. Although I have studied the method and have used it extensively, I consider it too time-consuming for a busy physician to practice it. Furthermore, in simple displacements the results of this method are no more satis*factory in some cases than other therapeutic measures* at our command. I have seen the late Thure Brandt and his former pupil, Oscar Nissen, accomplish astonishing results in instances of fixed retroflexions, if the fixation was the result of puerperal inflammatory conditions and if the uterus was held in faulty position by old cicatrices, but I confess that, while I was able to achieve similar results, thanks to the instruction that was given me by these gentlemen twenty years ago, I found that the method required too much time.

The retroflexions most amenable to permanent cure by pessaries are those of recent postpuerperal origin. Hence the importance of an accoucheur's regularly examining his patients about a month *after confinement*. Such a displacement can be most easily reduced (provided there are no adhesions) by pushing up the fundus in the posterior cul-de-sac with the index and middle finger, while with the thumb the cervix is sharply depressed at the vaginal junction toward the hollow of the sacrum, and the fingers of the external hand are being brought with a firm rotatory motion behind the fundus, which is being pushed toward the anterior parietes with the vaginal *fingers. When the fingers of the external* hand are behind the fundus this can readily be anteposed. By making pressure with the thigh against the elbow of the intravaginal fingers, the foot having been placed on a stool, the replacement is accomplished with less exertion. If the vagina is too narrow to admit the two fingers and thumb, the forefinger should depress the cervix, while the middle finger pushes the fundus upward in the retrouterine space.

Another method which may sometimes be used with advantage is that devised by Kuestner. In this method either the anterior or posterior lip of the vaginal portion of the cervix is grasped with a pair of tenaculum forceps, and is pulled in the axis of the vagina toward the vaginal outlet, which action stretches the cervix and brings the fundus nearer to the external hand so that it can be grasped by it and anteposed.

As soon as the displaced uterus has been properly reduced, a pessary should be adjusted. Care must be exercised in the selection of the pessary, that it be not too small or too large, and that it does not cause pressure on the soft parts. The patient should not be aware that a foreign body is in the genital tract, but the pessary must be of such size and shape as to hold the uterus in place. The pessaries best adapted to this are the Albert Smith and Thomas' pessaries. If the pessary has not the proper shape for the individual case, this can readily be given to it by proper molding, which is done by anointing the pessary with vaseline and moving it rapidly to and fro over the flame of an alcohol lamp until the rubber is heated so that it may be molded to the desired shape, when it is immediately set in shape by immersion in cold water.

After the adjustment, the patient should be allowed to walk about for a while and then be re-examined to determine if the pessary retains the uterus in position. The examination should be repeated a day or two later, to ascertain whether the uterus is held in position and the pessary is of the proper size and shape. A physician who is experienced will generally be able to make the proper selection of the pessary on the first attempt. While wearing a pessary the patient should use a vaginal douche daily, either of plain water or of a saline solution, even during menstruation. A pessary that has been properly fitted need not be looked after more than once in five or six months. It is advisable, when the patient asks how long the supporter must be worn, to tell her at least from two to five years; this being about the time that is necessary for a permanent cure of a displacement by a pessary, when such cure is possible. It will be found that from 20 to 25 per cent. of uncomplicated mobile backward displacements of the uterus can be permanently cured by such therapeutic measures.

I have so far considered only mobile backward displacements. There are some instances of backward displacements with light adhesions that are also amenable to treatment without the use of the knife. Allusion has been made to the Thure Brandt massage method, but because of the patience required to obtain good results with it, it was not further considered. Schultze devised a more rapid method of breaking up such light adhesions in one sitting under anesthesia. If no marked tubal complication is present, it may be tried, and occasionally I have been successful with it. The method employed is somewhat similar to that already described for replacing the mobile uterus bimanually, with this difference, that the middle finger is introduced per rectum, the fore finger and thumb per vaginam, and the adhesions are then forcibly broken up. If this method is successful, and the uterus has been anteposed, a pessary should be adjusted immediately, with an observance of the rules mentioned for mobile displacements. But, to repeat, serious tubal complications must be excluded before attempting this method.

Pessary treatment for the relief of acquired pathologic anteversions and anteflexions is practically useless, except for the relief of the vesical tenesmus, which sometimes accompanies these conditions. Of all forms of pessary which have been designed for anterior displacements, there is only one which in my opinion meets the requirements, that devised by Dr. Eugene Gehrung and known as the "Gehrung pessary." This pessary may also be used advantageously in mild degrees of descensus of the uterus and of the vagina. While I have never seen any case actually cured by it, most patients can be relieved more or less of the bearing down feeling of which they so frequently complain. The lower bar of this horseshoe-shaped pessary rests near the posterior border of the symphysis and elevates the protruding anterior vaginal wall and to some extent also the uterus. In Gehrung's hands it has proved satisfactory, even in marked degrees of prolapsus of the uterus and vagina. I have used it only as a palliative measure until the patient would consent to an operation, because I have not been successful in giving such patients permanent relief.

Congenital anteflexions, in which the cervix is nearly always retroverted, are dependent to a great extent on a marked shortening of the recto-uterine ligaments. Frequently a posterior perimetritis is associated with these cases. Pessary treatment is useless for such patients, so far as my observation goes.

My object in selecting this subject for discussion was to emphasize the fact that there are other therapeutic measures in gynecology than the use of the knife and scissors; and to recall from apparent abandonment a measure that in some cases secures important beneficial results.

39 East Sixty-first Street.

DISCUSSION.

Dr. C. Lester Hall, Kansas City, Mo.: The pessary has its place in cases of uterine displacement. I have used it for many years with a fair degree of success, but I find that in a great many cases it is harmful. I do not agree with Dr. Boldt, that it should be used in cases of suspected adhesions and of pathologic conditions in the adnexa. I believe that the method of tearing up adhesions is a dangerous one. But in a case in which there are no adhesions, and the woman desires to become a mother, I believe that the pessary can be used with marked advantage and possibly with permanent cure. In reference to putting the uterus in position before the insertion of the pessary, I do not believe that in many cases of fleshy abdomen it is possible for any man to tell positively whether the uterus is in proper position without the use of the intrauterine sound. By placing the patient in the knee-chest position, using the sound as a fulcrum, and with the Sims speculum retracting the perineum, I believe that it is possible to tell when one does or does not get the uterus in proper position. I do not believe that an ordinary sound should be used, but an instrument much like the Miller dilator or the male uretheral sound properly shaped. Many of these cases of young women are too early consigned to operative procedure. I have under my care a young married woman who had in her girlhood a retrodisplacement of the uterus and who continues to have it after each confinement unless I treat her by the postural method and as involution takes place see that the uterus is in proper position. I believe that the best cure for retrodisplacement outside of surgical procedure is pregnancy.

Dr. George Gellhorn, St. Louis: It is difficult to realize that gynecology at the present day consists of anything else but surgery. There are two points in Dr. Boldt's paper which should be emphasized because of their extreme importance. The first is that there are some men, both here and abroad, who assert that movable retroflexions do not cause any symptoms and consequently need no treatment. I am aware that such symptomless cases do exist, but they are comparatively rare and usually congenital. The overwhelming majority of acquired retroflexions, however, produce symptoms, sometimes only in remote parts of the body, and I am more than ever convinced that these cases require treatment. Movable retroflexion very often acts as an *agent provocateur* of neurasthenia; if you only correct the uterine displacement and dismiss the patient without further attention. Her neurasthenia which may have become independent will not receive permanent relief. It is necessary to treat also the neurasthenic symptoms of your patient. but you can not cure her neurasthenia unless you first relieve the exciting cause. viz: the retroflexion. As to the second point I heartily agree with Dr. Boldt that the proper treatment for uncomplicated movable retroflexion is the pessary. There appear in literature every now and then severe criticisms of the efficacy of the pessary, but to my mind such statements are acknowledgments of one's unfamiliarity with the possibilities of the pessary and the correct mode of its adjustment. With growing experience the number of irreducible uteri is markedly diminished. Should other means of replacing fail, the pressure weight method of Funke and Halban should be tried. The patient being in the Trendelenburg position, an empty rubber bag is placed in the vagina behind the cervix and then filled up with metallic mercury. If the uterus be movable at all, it will almost invariably glide past the promontory into its proper place and can now be held in position by means of a pessary. The intrauterine sound, on the other hand, which was advocated by the last speaker, carries with it the danger of perforation.

Dr. Albert Goldspohn, Chicago: The great evils which did occur in conjunction with pessaries, and therefore led the profession to exclude them from use, were not due to the pessary, but to the ignorant use, the abuse of the pessary in introducing it as if it were a lever or a jackscrew to raise something. Dr. Boldt properly called attention to the fact that the pessary must not be used unless the uterus is in normal position, and that that normal position must be secured by bimanual palpation, not by intrauterine instrumentation. This implies that the man who is able to restore a uterus by bimanual palpation will probably also recognize complications that would contraindicate its use. But I should like to call attention to one error that I think Dr. Boldt makes in declaring that if the uterus is held in normal position, in two to five years the round ligaments will in 20 per cent. of patients recover their normal shortness and then continue to hold that uterus. That is entirely the contrary of my own observation, and I have for at least fifteen or twenty years never had less than thirty patients with pessaries to look after. I can cite case on case of women who, on account of their aversion to surgery and because they had nothing but simple displacements, were treated by me with pessaries. The round ligaments of the uterus stretch and we might think that by the relief of tension they would retract, but that conclusion is not warranted. There is a period of grace, however, for the round ligaments, and that is shortly after labor when the element of involution is yet on the uterus and its appendages. If three or four weeks after labor the physician will examine his patient, and, finding a retroversion, will bring the uterus into anteversion by having the patient assume the knee-chest posture and by intelligent bimanual manipulation, and will then fit a pessary to hold that heavy uterus there assisted by the knee-chest posture assumed two or three times in the twenty four hours, he will meet with success. He will find it difficult at first and will have to examine and make readjustments frequently until the uterus becomes lighter; but if it be kept in anteversion successfully all the time, by such care on the part of both the doctor and the patient for about a year and the pessary be then removed, the displacement will be cured in the majority of the cases.

Dr. Bertha Van Hoosen, Chicago: I have treated cases of downward displacement of the uterus successfully by the employment of a series of glass globe pessaries. This method is not especially useful in cases in which there is almost no muscular tissue in the perineum. The only time when the patient will have any difficulty is when she goes to stool. Any pessary that will remain in while the patient is standing or walking will be large enough. After the pessary is worn for a couple of months there will be difficulty in removing it, and the fingers will have to be placed in the rectum, probably causing an abrasion of the vaginal mucosa. When this pessary is removed a smaller size should be inserted to be worn for two or three months. After wearing this there will again be difficulty in its removal, and a still smaller size is then inserted. In two to eight years you will be able to let that patient go without any pessary at all. By this method you are simply taking advantage of the natural atrophy that is going on. Any patient who is over 50 who has some muscular tissue in the perineum and has patience can be treated in this way very successfully. Sometimes there is atrophy in the cul-de-sac of Douglas which will make it almost impossible to retain the glass pessary, and it is contraindicated here. I have applied the glass globe in cases in which the vagina had a large ulcerated surface and when the pessary was removed the surfaces had *completely* healed and the pessary had caused no irritation.

Dr. A. Ernest Gallant, New York: In some cases I have been surprised, when the patient returned, to find that the pessary had turned "end for end." A careful study of the pessary and these cases convinced me that the usual plan of introduction was wrong. The smaller end of the pessary is like a wedge, and it is so rounded that when that end is placed downward it slips from under the symphysis and out through the vulva whenever any pressure from above forces it down. On the other hand, with the small end uppermost, the cervix rests in perfect adjustment and does not wobble, the broad end under the symphysis lifts the floor of the bladder, and no amount of force can dislodge it, unless the perineum is torn or the pessary is not of a proper size. I have introduced the pessary in this way many thousands of times and it certainly fits better and holds the uterus in good position.

Dr. Frank Hinchey, St Louis: I think that Dr. Goldspohn is right in taking issue with Dr. Boldt in regard to the function of the round ligaments, but he gives no explanation of this theory. I think that we are wrong in placing any reliance on the round ligaments for acting as a support to the uterus in any way, either in holding it forward or having any effect on it when it is backward. I believe that the round ligaments are relics of the quadrupedal stage, when their purpose was to prevent the heavy, pregnant uterus from pitching forward when the animal was leaping. In the human being, however, there is no use for them. This is well shown by the fact that all operations for replacement of the uterus by shortening of the round ligaments are useless unless the pelvic floor is perfectly repaired.

Dr. W. O. Henry, Omaha: I believe that the general practitioner will find it better to put the patient in the knee-chest position, get the uterus back in its place and then insert the pessary. It can be done much better in this way than by lifting the uterus up, with the patient in the dorsal position. I do not believe it wise to use injections of any kind during menstruation. I believe that Schultz's method of treating a misplaced uterus bound down by adhesions is always wrong, and I object to that procedure entirely. I think that we are working in the dark and should never subject a patient to the tearing up of these adhesions under an anesthetic unless the work is done under the eye.

Dr. H. J. Boldt, New York: I have never seen cases of forward displacement with descent of the uterus cured by mechanical support. The percentage of patients cured in the cases I have mentioned was taken at random. I know that a certain proportion are cured and I take it that from 20 to 25 per cent. of those patients wear a support from two to five years. No one should think of introducing a pessary as Dr. Hall suggests, with the uterus fixed by adhesions. In regard to Dr. Henry's remarks I have seen good results in a few instances, but personally I am not in favor of the method.

Study of Pediatrics.—Caille, in the *Archives of Pediatrics*, states that the broadening influence of pediatric study has not been sufficiently emphasized and is probably underrated, but must be conceded as we realize how thoroughly the practice in diseases of children brings us into close touch with almost every other special line of medical work, including general surgery, the eye, ear, nose and throat specialties, orthopedics, skin diseases, etc.

NITROUS OXID AND OGYGEN IN DENTAL AND MAJOR SURGERY.*

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Since the discovery of chloroform and ether post-operative pneumonia, renal complications and other deleterious results, as well as the danger of death from their use, have baffled the medical fraternity, and the only apparent escape from this condition seems to be through the widespread use of nitrous oxid and oxygen.

The dentist has been so prominent in the discovery of anesthesia and has made his work so well known that this paper shall deal mostly with the surgical field. It is well to state, however, that the nasal administration of nitrous oxid combined with pure oxygen is surpassing all previous results in dental anesthesia.

Recent clinical experiments prove, beyond doubt, that this anesthetic is of great value to the surgeon and a boon to suffering humanity. The premonitory signs of danger produced by nitrous oxid and oxygen are so marked that the patient is much safer in the hands of an inexperienced operator than if chloroform or ether is used, to the extent that the respiration and not the heart is mainly involved, the latter continuing in its normal rhythm some minutes after muscles of respiration are completely paralyzed.

Contraindications for the use of this anesthetic are atheromatous and arteriosclerotic conditions, although I firmly believe that by double diligence with pure oxygen even patients with these conditions may be safely anesthetized. Experiments are under way at the present time by one of our leading surgeons for the purpose of testing the blood pressure with this anesthetic and the safety of its use. Inasmuch as he is substituting common air for pure oxygen, his report will not be conclusive.

Asphyxial symptoms always warn the anesthetist, however, giving abundance of time for the application of simple means for resuscitation, namely, rhythmic traction on the tongue, douching the face with cold water, pulling the chin upward, uniform pressure on the chest, and, in cases of complete suspension of respiration, weak ammonia held to nostrils, etc. Hypodermic injections of strychnin and brandy or ether do no good; the same is true of amyl nitrite, and time should not be wasted trying these restoratives.

Let it be understood that death may follow nitrous oxid anesthesia when the gas is too freely administered, especially when not combined with pure oxygen. It seems to be the consensus of opinion of the medical profession that the time has arrived for the employment of the professional anesthetist, with whom the legal responsibility of death must rest instead of with the surgeon. Hospital staffs and operators are complaining of the loss of their anesthetists whom they have carefully trained. These men remain but a short time in our hospitals, on account of lack of remuneration, and engage in more lucrative practice.

It is generally conceded that there is no medical subject more grossly misrepresented than the concomitant effects of anesthesia. These effects are usually attributed to a thousand and one ills, and while they have been regretted by the surgeon, he has hitherto seen no avenue of escape.

Both primary and remote mortality of chloroform and ether admonish the surgeon to look for a substitute, which seems to have been found in nitrous oxid and oxygen, though the value of this substitute is not fully comprehended by the profession.

Experience shows that the much dreaded cyanosis is due to the lack of oxygen and not to any specific poisonous effects of the gas.

Regarding the danger of death, it is an established fact that the only cases on record of death from the administration of nitrous oxid were occasioned by the administration of this gas alone, and that death has never occurred when nitrous oxid combined with pure oxygen has been administered. Kolischer also quotes the statistics of Bellamy, who reports 4,000,000 administrations in England in four years. It is further stated that seventy-five thousand patients undergo this anesthesia in America annually.

Dr. Gustav Kolischer, a recent and ardent advocate of the use of nitrous oxid and oxygen in major surgery, quotes Israel, who says that 75 per cent of all the deaths occurring in his kidney work are heart deaths. "A perusal of the statistics of trustworthy surgeons shows that the great majority of their deaths in prostatectomies occur in the first forty-eight hours. Nothing is more feared by laparotomists than the paralysis of the bowels due to general anesthesia and the suspension of the activity of the kidneys."

Complex apparatus and trained anesthetists have failed to lessen the deleterious influences of anesthetics on the heart, excretory organs and general vitality, or to alter the total results.

Yet literature, up to the present time, attributes none of these results to nitrous oxid and oxygen; and this statement coincides with reports of such American surgeons as Kolischer, Beck, Bevan, Baccus, Andrews and Lobdell. Our own specialists, like Teter, Thomas and Schamberg, concur in this report. I have during eighteen years performed approximately thirty thousand administrations without a single accident, and at least one hundred of these administrations were for major operations. One office in Philadelphia reports nearly three hundred thousand administrations without an accident.

The anesthetic power of nitrous oxid and oxygen has never been doubted, but the cyanotic conditions arising from its use prevented its adoption to any great extent until, of late, pure oxygen has been the necessary adjunct to place it foremost in anesthetics.

The most noteworthy advance in the use of nitrous oxid and oxygen, as an anesthetic in major surgery, is due to the admixture of pure oxygen, which has thoroughly changed the plan of administration.

Many experiments like the one which M. Martin reports have been tried. He kept a dog in a chamber for three consecutive days, giving it nitrous oxid and 15 per cent. oxygen, after which it regained its normal faculties.

Sprouting seeds fail to grow when placed in nitrous oxid, but resume their growth when pure oxygen is added. Let it be understood that atmospheric air is not a satisfactory substitute for oxygen, especially vitiated air of the crowded surgery room, and that cyanotic conditions may be overcome eight times quicker with pure oxygen.

It is impossible to state definitely the percentage of pure oxygen that may be administered to a patient, since there are no fixed rules and every patient requires treatment according to that patient's susceptibility to anesthesia. To one patient, 92 years of age, I administered 25 per cent. oxygen at the close of one hour's anesthesia, while other patients are awakened on a 5 to 10 per cent. An experienced anesthetist will quickly supply the needed proportions required by each patient.

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* Read in the Section on Stomatology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

It should be remembered that other anesthetics depress, while nitrous oxid and oxygen stimulate, and the heart is the last organ to give up its function. One of the chief barriers to the universal adoption of this, the safest of all anesthetics, and the one chiefly considered by the surgeon, is the expense, which, however, is not prohibitive, as it might seem. The actual expense per hour is approximately $6 in consumption of gases.

It should be known that the surgeon in many cases is not free from the censure of selfishness when he will not share his fee with the anesthetist in order to permit his patient to escape the primary and secondary effects of general anesthesia. The anesthetist should be well paid and thus encouraged to devote himself to his specialty.

It is important to mention at this time a new apparatus, invented by Dr. Charles K. Teter, of Cleveland, Ohio, which makes it possible to administer definite proportions of nitrous oxid, chloroform or ether, with pure oxygen. I use the apparatus exclusively in my anesthesias, as does the inventor, Dr. Teter. Important among his recent additions is a warming attachment eliminating the refrigeration of cylinders, also permitting the patient to breath warm air.

In obstetric practice this anesthetic is excellent, because we may obtain analgesia and even anesthesia without muscular relaxation or disturbance of the normal course of labor. Uterine contraction is not in the least interrupted by the use of this anesthetic according to the following method: On the approach of labor pains the patient is permitted to inhale three or four breaths, placing her in a state of analgesia; the inhaler is then removed; and the process is repeated as often as necessary. Should it be desired to retard labor, a small percentage of chloroform may be added. Owing to the rapidity of the action of the gas and its rapid elimination it stands foremost as an obstetric adjuvant. I report two cases of directly opposite type:

Case 1.—Patient was a multipara, aged 40. Her first child had been delivered with instruments, after thirty-six hours' dry labor. The patient had the left ovary and tube removed and extensive adhesions, due to localized peritonitis, broken up. Her general condition was one of muscular atonicity, malnutrition, etc., due to previous years of suffering preceding laparotomy. The patient became pregnant fifteen years after the operation, gained thirty six pounds during gestation and was restored to normal health.

Anesthesia.—At full term and approach of delivery, preparation was made to use gas and oxygen. The patient was instructed to refrain from calling for the gas during the early stages of labor. When the pains became severe and more frequent, she was permitted to inhale about four breaths and, as numbness was felt, the mask was removed. This was repeated during four hours with gratifying results to the patient. To quote her statement: "Childbirth has no more terrors."

Case 2. The patient was a multipara, aged 30, robust, muscular and athletic. The onset of labor indicated rapid birth. The pains came thick and fast with increasing severity.

Anesthesia.—The patient demanded gas from the beginning. A rigid and undilated os required retardation of labor, which could not be obtained with nitrous oxid and oxygen alone, so 6 per cent of chloroform was combined with the gas until dilation was obtained and then the former methods pursued. The patient was delighted, and extolled the method. Labor was normal and the placenta was naturally expelled.

Final deductions from these cases are: 1. There is no danger of post-partum hemorrhage superinduced by the anesthetic. 2. Patients may have abundance of anesthetic to relieve suffering. 3. A safe and reliable anesthetic may be constantly at hand in case of instrumental or abnormal delivery.

I herewith briefly present a few average abstracted cases and reports of surgeons for whom I have administered this anesthetic:

Case 3.—Patient, male, aged 48. Operation by Drs. L. L. McArthur and L. E. Frankenthal for carcinoma of pancreas with secondary obstruction to common duct and subsequent enlargement of gall bladder. Patient extremely jaundiced. Nitrous oxid and oxygen anesthetic, one hour and thirty minutes. Results ideal. Patient awakened perfectly rational, and conversed five minutes after operation.

Case 4.—Patient, male, 30 years of age, tanner. Double inguinal hernia, complicated on one side by omental prolapse, which was adherent to sac due to old injection of phenol into sac for purpose of cure. Anesthetic, nitrous oxid and oxygen, for one hour and twenty minutes, in every respect satisfactory, patient did not resist in the least and came out of anesthetic with hardly any after-effects. He had a slow pulse and vomited once three hours after anesthetic. (March 20, 1908, Dr. Carl Beck.)

Case 5.—Patient female, wife of physician. Large internal and external hemorrhoids, cyst of vagina and perineorrhaphy. Nitrous oxid and oxygen anesthetic for about one hour, excellent anesthetic, no after effects except a slight nausea. (March 24, 1908, Dr. Carl Beck.)

Case 6. Patient female, 48 years of age, "came to hospital March 10, 1908, in an extremely anemic condition due to uterine hemorrhages which had continued for six weeks previously. The vaginal hysterectomy, which was performed on March 12, required an anesthetic for nearly two hours, owing to the complications in the case. The patient was awake ten minutes after the operation, with no ill effects from the anesthetic, no vomiting having followed, and kidneys kept on secreting three to eight ounces of urine every three hours without catheterization. The patient has made a splendid recovery. (Dr. Emil Beck.)

Case 7.—Patient male weighing about two hundred pounds, very powerful alcoholic on whom an operation for perivesical abscess with plastic work on the urethra had to be performed. Operation very extensive, for perineal and suprapubic cystotomy. Patient took over four hundred gallons of gas and 3 to 5 per cent of oxygen during the operation. Patient awoke in the operating room five minutes after the anesthetic was stopped, talked rationally, had no bad effects from the anesthetic, and could be fed with a light diet the same day.

"For difficult cases or those in which kidney complications are feared I believe this anesthetic is preferable to ether, as the patients are always in better condition as soon as they wake up." (Dr. Emil Beck.)

Case 8.—Patient, male, aged 5. "At age of two years had severe endocarditis without rheumatism or other apparent cause. Life despaired of. Mouth breather, with occasional running ears and intermittent deafness. Examination of heart showed evidence of slight left heart enlargement and systolic murmur at apex and another loud one with seat at aortic area. Pulse average 85, of fair quality with an occasional intermission. Owing to above condition chloroform or ether was contraindicated. Removal of adenoids by means of Lowenberg's forceps introduced by the mouth and straight forceps by the nose. General anesthesia by nitrous oxid and oxygen. Was most satisfactory in every way. May 6, 1908." (Dr. A. M. Corwin.)

Case 9.—Patient, female, aged 38. "Ovariotomy, appendectomy and Coffey's operation for shortening round ligaments. Patient was anesthetized with nitrous oxid and oxygen, taking 7 to 10 per cent of the latter, with not a particle of cyanosis present. No nausea or disagreeable after effects. A delay of one-half minute was occasioned to obtain relaxation when adhesions were broken up from the inflamed uterus. A greater test could not have been made of this anesthetic than in this case, which proved highly satisfactory in the presence of one hundred visiting physicians. The only possible criticism of this anesthetic is the expense." (May 29, 1908. Dr. A. J. Ochsner.)

Case 10.—Patient, male, aged 35. "An incision was made from the external canthus of one eye, through the eyebrow, across the bridge of the nose, through the opposite eyebrow to the external canthus. A Gigli saw was passed into the incision, through bone and periosteum, sawing through the septum between the two frontal sinuses. This exposed the cavities of the frontal sinuses, which were thoroughly cleansed of their pathologic condition (granulations); the natural opening into the nose was thoroughly established by enlarging, and through the floor of this frontal sinus the interior ethmoid cells were thoroughly broken down and curetted. Nitrous oxid and oxygen was administered by Dr. Ream during the whole time of the operation, which lasted two hours and which was a perfect success as far as anesthesia was concerned, without the least bad after-effects. In fact, the patient was awake before he reached his bed. This patient had two radical operations on his mastoid previously and during each of these two previous operations a great deal of trouble was encountered from the anesthesia, which was both ether and chloroform, the patient having bad after-effects especially." (May 9, 1908, Dr. Joseph C. Beck.)

I report three major operations in which I administered nitrous oxid and oxygen for Dr. Gustav Kolischer during May, 1908:

Case 11.—Patient, male, aged 30. Tumor of the bladder. Suprapubic operation. Total suture of bladder and skin incision. Duration of operation, fifty-four minutes. Patient returned conscious to bed. Urinated naturally three hours after operation.

Case 12.—Patient, male, aged 40. Papilloma of the bladder. Suprapubic total suture of the bladder and skin incision. Duration of operation, forty minutes. Urinated naturally three hours after operation. Slight nausea for about five hours.

Case 13.—Patient, female, 63 years old. Cyst of the left ovary, and cancer of the cervix. Abdominal celiotomy, removal of the cyst and Wertheim's operation for cancer of the uterus. Duration of the operation, sixty-five minutes. Pulse, 88. Patient regained consciousness after twenty-five minutes. No nausea. Took fluid without any discomfort.

Case 14.—Patient, female, aged 58. Exploratory laparotomy. Suspected uterine sarcoma. Case pronounced inoperable on account of severe growth and extensive adhesions. Patient had severe myocarditis. Was anesthetized with nitrous oxid and oxygen for forty-five minutes without disagreeable symptoms. Marked absence of cyanosis and nausea. Recovery within five minutes. (June, 1908, Dr. E. C. Dudley.)

Case 15.—Patient, female, aged 60. Vaginal and abdominal hysterectomy. Same anesthetic, lasting one hour and ten minutes. Results ideal. To quote Dr. E. C. Dudley: "This is the best anesthetic I ever saw in such grave cases." This opinion was also concurred in by Dr. C. P. Caldwell.

52 State Street.

DISCUSSION.

Dr. C. K. Teter, Cleveland: I have for the last five years devoted my time exclusively to investigations along this line. I have administered this anesthetic over 12,000 times, and over 1,000 of these administrations were for extensive cases of major surgery lasting from a half hour to three hours. So far as my experience goes, the time does not make any difference; you can anesthetize a patient for a half hour or for three hours, if consistent with modern surgery to keep the patient under the influence of an anesthetic that long. How long a patient could breathe nitrous oxid without bad results would depend a great deal on the condition of the patient and the way it was administered. Nitrous oxid and oxygen form undoubtedly the safest anesthetic now known, and it is more free from after-effects than any other. Following its use, no degenerative changes take place in the system so far as we have yet discovered. I have given it in all stages of degenerative conditions in the system—sugar in the urine and other kidney diseases, and have never yet had complaint that the patient was rendered any worse. It is quickly eliminated from the system.

The administration of nitrous oxid and oxygen for a major operation requires considerable skill. Almost any one can render the patient unconscious so that he will not be cognizant of the pain of minor operations; but to obtain complete relaxation for extensive laparotomies requires an expert. As a rule, when we begin work with surgeons in laparotomy or other extensive work, they require relaxation; but after they get used to this anesthetic and accustomed to a little rigidity and necessarily more or less cyanosis, they put up with these factors on account of the patient being in a better condition, without mixing chloroform or ether with the nitrous oxid. At first surgeons said that the rigidity hampered them, but now they find that rigidity throughout the whole operation helps more than it hinders; when they close the incision they can do it more rapidly than if the muscles were flabby.

The nature of nitrous oxid is such that to derive its anesthetic effect it has to be given practically pure. That is its drawback. If we could use 50 per cent. pure and get the desired anesthetic effect, it would be an easy matter to administer it, but we have to use it about 90 per cent. pure, and with 10 per cent. only of air, respiration is rendered difficult. For this reason the combination of oxygen with nitrous oxid gives better results than dependence on air. In the average case, eight parts of oxygen will overcome the asphyxial effect of the nitrous oxid. If you are depending on the atmosphere to get the eight parts oxygen, it will be necessary to admit about forty parts air and unless your patient is extremely susceptible to the effects of nitrous oxid you will not get surgical anesthesia. By means of the nasal inhaler, the anesthetic being taken through the nose, the mouth is not obstructed, and oral operations can be performed without the addition of chloroform or ether. With a nasal inhaler you can keep your patient under the influence of the anesthetic indefinitely. It is more difficult to use than the face inhaler, but it can be done very nicely so that all oral operations, as extraction of teeth, etc., can be done as a surgeon should do his work. The idea of the dentist giving nitrous oxid and then accomplishing his work in a few seconds, is not a good one, for he can not do it skilfully and can not leave the mouth in the condition in which it should be left. If by means of the nasal inhaler he keeps his patient anesthetized sufficiently long for him to do the work properly, the gums will be left in a good condition, he has time to clean up the whole mouth at one operation, and when the patient comes out from under the influence of the anesthetic he has no recollection of the work. In doing extracting for dentists I seldom use a face-piece, but invariably the nasal inhaler. I want to know that I can take all the time necessary to do the work as it should be done.

Dr. Frederick B. Moorehead, Chicago: Nitrous oxid is an established means of anesthesia. Prominent surgeons are using it, and gradually are coming to use it more and more. The question as to the safety of nitrous oxid anesthesia has not been decided. Chloroform has been used as a general anesthetic for a great many years, and only within the last three or four years was its real danger discovered—that of the production of diacetic acid and acetone and subsequent fatty changes in the liver and other vital organs, causing death as a secondary result. We do not know what the permanent effect of the two-hour administration of nitrous oxid is going to be on the hemoglobin after a long period of time. The work of greatest importance in this is yet to be done, and that is to determine the relation between nitrous oxid and hemoglobin. For two years I have with two or three others been trying to do that work, but we have found it exceedingly difficult, inasmuch as it requires a great deal of physiologic chemistry, because hemoglobin is a very intricate compound to study; but that is where the work must be done. The administration of nitrous oxid anesthesia, whether we shall use air or oxygen, depends a great deal on the personal equation, a factor we must always keep in mind in discussing every subject. I can not take the position that a man can not give nitrous oxid perfectly unless he uses oxygen; no other man can take the position that it can not be administered without air; the administration of this anesthetic depends more on the personal equation than does any other. Our trouble in giving nitrous oxid over a long period of time has been in the fact that we have asphyxiated our patients and not anesthetized them. Its absorption is necessarily slow, and where that critical contact between hemoglobin and nitrous oxid takes place we have not yet discovered. There is undoubtedly an absorption of nitrous oxid into the hemoglobin, thus producing the anesthesia. By administering the drug over a long period of time we get anesthesia, and the production of a large amount of carbon dioxid, which is deleterious. We not only get asphyxia, but delirium and toxic conditions following the absorption of a large amount of carbon dioxid. The relation between nitrous oxid and hemoglobin, the nature of the combination and the possible effect on the patient constitute, I believe, the vital question in the whole matter.

The patient will not become cyanotic if gas and air are given in the right proportion. There may be difficulty in producing the anesthesia, however. We can with nitrous oxid and air get anesthesia in the majority of cases without asphyxia, but we have patients with apparently an idiosyncrasy, who, therefore, require more gas to produce anesthesia than is safe to give.

Dr. Orval J. Cunningham, Kansas City, Mo.—It appears that nitrous oxid and oxygen anesthesia is as yet in its infancy. We do not know the theory of its dangers, neither do we know the theory of the dangers of chloroform and ether. We know that deaths from nitrous oxid are rare, and that deaths from chloroform and ether, especially chloroform, are comparatively common. In the millions of times that nitrous oxid has been administered there have been reported only about thirty deaths.

The chemical union of nitrous oxid with the hemoglobin—and it seems that such does occur—must be very loose because its action is transitory and when the gas is withdrawn a quick cessation of the symptoms follows. We know that the nitrous oxid is a true anesthetic agent aside from its asphyxial properties. Pure nitrous oxid, nitrous oxid and air, or nitrous oxid with a deficient amount of oxygen, anesthetizes by the combined action of asphyxiation and the anesthetic properties of the nitrous oxid. We can get complete anesthesia in from four to six minutes by simple rebreathing without the use of any anesthetic agent. This asphyxial element of nitrous oxid anesthesia is easily overcome by the proper use of oxygen, but not with air. The cyanosis produced by nitrous oxid with deficient oxygenation, however, is very different from the cyanosis produced by the action of chloroform and ether, except when the cyanosis of chloroform and ether is from obstructed respiration. The cyanosis of nitrous oxid is from a lack of opportunity for the blood to take up the normal amount of oxygen, is not from an abnormal condition of the nervous or circulatory systems, and is no more dangerous than the cyanosis caused by a paroxysm of pertussis. The cyanosis of chloroform and ether is caused by capillary stasis, which is brought about by atony of the capillary vessels or by impaired heart action. The cyanosis of nitrous oxid comes quickly and disappears quickly when oxygen is added; the cyanosis of chloroform and ether comes on slowly, is preceded by an interval of ashy pallor, and disappears slowly, even though pure oxygen is given. Nitrous oxid and oxygen anesthesia is hardly practical for laparotomies in severe cases, because of abdominal rigidity. For other surgical work it is eminently practical if properly administered.

I believe that attention has not been called heretofore to the action of nitrous oxid and oxygen followed by ether, as in the use of Clover, Bennett and other apparatus. With them it is necessary to discontinue the gas at the end of a minute and a half to two minutes because of the asphyxiation which would otherwise follow. This necessitates pushing the ether, and also the use of rebreathing to prevent the patient from coming out. But even then the patient will almost invariably come out enough to swallow about as much as if ether had been given alone. But if oxygen be added to the nitrous oxid, complete nitrous oxid anesthesia can then be continued until ether narcosis is thoroughly established. By this means we prevent a return of the reflexes between the gas and ether which eliminates the greatest factor in the production of post-operative nausea and vomiting, viz., the swallowing of the ether laden secretions of the mouth.

THE NON-RELATIONSHIP OF ACTIVE CELLULAR DIVISION TO THE PROGNOSIS IN MALIGNANT DISEASE.*

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There appears to be a wide-spread opinion that the progress of a given case of malignant disease can be foretold by means of a microscopic examination of a portion of the tumor. In other words, it is believed that the number of actively dividing cells found in the tissue bears a definite relation to the rapidity of the growth of the neoplasm. The greater the number of actively dividing cells, according to this opinion, the more rapid the formation of new tissue and consequently the graver prognosis.

In various text-books, in monographs, in pathologic reports, and by direct word of mouth is the above thought passed on from one to another.

Attention was first drawn to this subject by the fact that the majority of *squamous epitheliomata* contain many mitotic cells. As is well known, this form of carcinoma is not as a rule as malignant in its course as are the other varieties. It was found that in a large percentage of these cases there were many mitotic figures, although the clinical history was that of a slowly growing neoplasm. This being the case, it was thought well to investigate, as thoroughly as possible, the question of the relationship, if any, between the presence of actively dividing cells and the seriousness of the lesion.

In the estimation of the activity of the cells no very accurate method could be devised. Those cells whose nuclei were not broken down and which stained intensely were taken into consideration as well as those in which actual mitotic figures could be observed. The fact that the nuclei remained unbroken and stained very deeply was considered as an indication of the presence of a large amount of chromatin such as is found in actively dividing cells.

The question as to the number present was also a difficult one to answer and had to be done in a purely personal and arbitrary way. It was not difficult to separate the "very many" from the "very few" but it was at times hard to decide when the "many" point had been reached. If several fields of the microscope had to be examined before active cells could be found that specimen would be considered as having few. If every field had several it was then said to belong to the type having many dividing cells.

After taking up the percentage of specimens containing many and few mitotic cells their relation to the duration and to the rapidity of the growth was considered. These figures are open to criticism on certain grounds, particularly when the rapidity is examined into. In many of the cases there is a history of the growth having been present for a number of years, during the greater part of which time it has progressed but slowly. In a number of such instances the patient when seen by the physician, will say that for the past few months the tumor has been increasing rapidly in size. This is most common in cases of squamous epitheliomata of the skin surface. Out of thirty-six instances of squamous epitheliomata there were twenty-five (69.4 per cent.) in which actively dividing cells were numerous while in the remaining eleven (30.6 per cent.) there were few such cells.

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*From the Laboratory of the St. Louis Skin and Cancer Hospital.

Of the above twenty-five cases with actively dividing cells there were fifteen (60.0 per cent.) in which the patient said that the epithelioma had been growing rapidly and ten (40.0 per cent.) in which there was a history of a slow course.

When the carcinomata are examined it is found that out of twenty-eight cases nineteen (67.8 per cent.) contained many active cells while in nine (32.2 per cent.) there were few. These figures are practically similar to those found in the squamous epitheliomata.

Of the nineteen above cases thirteen (68.9 per cent.) were of rapid growth, while the remaining six grew slowly.

With rodent ulcers a somewhat different condition is found. As might be expected from their chronic course there were in twenty cases only nine (45.0 per cent.) in which many active cells were present while in eleven (55.0 per cent.) such cells were very few. In all the twenty the growth of the tumor had been slow.

The duration of the growth also does not appear to have any bearing upon the number of active cells, the majority of the tumors containing many such. Of twenty-eight epithelial growths of two years' duration or longer twenty-one (75.0 per cent.) contained many active cells. When thirty-six of less than two years' existence were examined, twenty-five (69.4 per cent.) showed active division. From these figures it would seem evident that the duration has no direct bearing. There is, however, one point that might be brought forward that would tend to vitiate this conclusion. The patients usually come to the physician as a result of an increase in the rapidity of the growth of the neoplasm. At such a time the cells may be in a more active state of multiplication and in the tissues obtained the active cells would be more numerous.

TABLE OF CASES OF MALIGNANT DISEASE

Name	Sex	Age	Laboratory Number	Nature and Location of Growth	Duration	Rate of Growth	Number of Multiplying Cells	Subsequent History
J N	M	74	603	Epi, lip	7 mo	Rapid	Many	Died from interference with eating 7 months after first examination
M R	F	80	242	Car, breast	3 yr	Rapid	Many	Died 8 months after first examination, senility
J S	F	70	287	Car, breast	2 yr	Rapid	Many	Died 16 months later
W J	M	77	3	Epi, ear	5 yr	Rapid	Very many	Alive 5 months later
B K	F	55	708	Car, uterus	1 yr	Rapid	Many	Alive 6 months later
Mrs K	F			Car, nares	3 mo	Rapid	Many	Alive 10 months later
R W	F		41	Car, cervix	1 yr	Rapid	Very many	Alive 18 months later
G S	M	75	2	Epi, lip	11 mo	Rapid	Very many	Alive 27 months later
J L T	M	75	558	Rodent ulcer, chin	11 yr	Slow	Many	Died 6 months later from interference with eating
Mr S	M	62	888	Epi, palate	5 mo	Slow	Many	Died 7 months later from interference with eating
Mrs C	F	72	650	Car, breast	2 yr	Slow	Many	Died 6 months later from hip joint amputation. No recurrence in breast
J Q	F	71	6	2d epi of axilla	2 mo	Slow	Very many	Died 7 months later
S O M	F	74		Rodent ulcer, orbit	5 yr	Slow	Many	Died 11 months later
J M W	F	51	341	Car, breast	2½ yr	Slow	Many	Died 17 months later
Mrs B	F	64	619	Car, breast	1½ yr	Slow	Many	Alive 30 months later. No recurrence
G K	F	70		Car, uterus	6 mo	Slow	Many	Alive 11 months later
J E	F	54	110	Rodent ulcer, ear	24 yr	Slow	Many	Alive 4 months later
M M	F	70	152	Rodent ulcer, eye lid	6 yr	Slow	Many	Alive 22 months later
C B	F	55	211	Car, breast	2 wk	Slow	Many	Alive 24 months later
M L	M	45	647	Epi, lip	7 mo	Slow	Many	Alive 12 months later
Mr I	F	71	894	Epi, orbit	13 yr	Slow	Many	Alive 7 months later
C Y	M	54	962	Epi, hand	3 yr	Slow	Very many	Alive 6 months later. "Am practically well"

From a consideration of the foregoing it is evident that very little conclusion could be drawn concerning the significance of the number of the cell divisions. This point it seemed could be determined only by following the clinical course of the disease after the examination of the tissue. These specimens were obtained at the time of operation, fixed in Zenker's solution and stained in various ways.

In all there have been twenty-two cases followed, after leaving the hospital for periods ranging from one or four months to one or two and a half years. From a study of these there does not appear to be any relationship between the abundance of dividing cells and the period elapsing before death takes place. In all these instances the number of active cells varied from many to extremely numerous; in none were there found but a few.

Of these above cases there were eight in which the patient said that the growth had been rapid. Three of these patients died eight, sixteen and seven months after the operations, the first two of senility, being eighty and seventy years old respectively; the third died mainly as the result of interference with swallowing, the floor of the mouth being involved. The other five were still living when last seen, five, six, ten, eighteen and twenty-seven months later.

The remaining fourteen tumors had been of slow growth. In six of these cases the patients died in from six to seventeen months, but in several of them death was not the direct result of the malignant disease. One of them was a case of an epithelioma of the roof of the mouth. Another patient had a rodent ulcer of the chin. These patients died at the end of seven and six months from inanition. One died six months after the first operation as a result of a hip-joint amputation done on account of a fracture of the femur due to a secondary deposit of carcinoma from the breast. At the time of death there was no recurrence in the mammary gland.

The deaths of the other three patients occurred seven, eleven and seventeen months later. As the patients were seventy-one, seventy-three and seventy-four years old, senility was an important factor.

The remaining eight were still alive and apparently well four months to two and a half years after the operation.

From the above results it would seem quite evident that the clinical course of the disease has very little relation if any to the number of actively multiplying cells in a given specimen of neoplasm.

It is clear then that it is not wise for the pathologist to attempt to make any prognosis concerning the duration of the life of the patient by drawing conclusions from his microscopic examination. It also would seem advisable not even to suggest that the tumor is apparently taking on a rapid growth as that could easily give the clinician an incorrect idea.

The accompanying table gives a summary of the cases from which the conclusions are drawn.

410 North Jefferson Avenue.

THE VAGINAL, THE VERTICAL-ABDOMINAL, AND THE PFANNENSTIEL INCISIONS

THREE PROCEDURES FOR ENTERING THE PELVIC AND ABDOMINAL CAVITIES

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PHILADELPHIA

Many and spirited have been the discussions over the relative merits and demerits of the vaginal and abdominal routes in the practice of pelvic surgery. In discussing them and the additional procedures, I shall endeavor to do so not as a partisan, but with the sole purpose of making evident the conditions under which they may become useful where one may be preferable, and thus enrich the resources of the conscientious investigator in this realm.

VAGINAL ROUTE.

Subsequent to, in many cases prior to infection, the tubes and ovaries not unfrequently drop into the retro-uterine pouch. The infection drains into this most dependent portion and forms a large collection varying between dirty serum and foul acrid pus, according to the character and virulence of the infection. Such a collection is walled off from the general peritoneal cavity by a mass of exudate—Nature's barrier against the spread of infection. Incision through the posterior vaginal fornix, in such conditions ensures the evacuation of the accumulation without danger of soiling the peritoneum. Independent tubal or ovarian abscesses can be opened into and drained without the spread of the infection. Under such circumstances does it not seem the height of folly to attack such a collection from above?

Certain considerations are of importance in determining the selection of the vaginal route. The vagina must be dilated, or readily dilatable, hence the procedure should not be advised in a virgin or nulliparous woman with a small vagina. The collection, whether serum, pus or blood, must be situated in the retro-uterine pouch or be readily accessible through it. Collections in a single tube or a suppurating ovary situated above the superior strait are preferably treated by abdominal section. In the large majority of cases, the vaginal section should be made through the posterior fornix for the reason that this is the most dependent portion of the peritoneum and drainage is most effectually accomplished. Access is here most readily afforded, as the tissue through which the incision is made is but a quarter of an inch in thickness.

Large collections of pus, however, will frequently necessitate an anterior colpotomy as well, in order to afford vent to accumulations in front of the uterus and the broad ligaments. The anterior incision facilitates the investigation and treatment of perisalpingitis and perioophoritis when the affected structures are fixed in or near their normal situation. I would, then, advise vaginal incision for retro-uterine collections as a procedure which will render an abdominal incision at the same, or a subsequent date, less grave and may frequently make it unnecessary.

The vaginal route is of especial value in exploring and treating diseases of the tubes and ovaries, and particularly in obscure cases in determining the existence of ruptured ectopic gestation. Some forms of malignant disease of the uterus, some uteri containing small fibroids and occasionally inflammatory conditions of the appendages which justify hysterectomy are best treated through the vagina, particularly when the patient has a large quantity of adipose tissue in the abdominal wall.

ADVANTAGES OF VAGINAL ROUTE.

The vaginal route has the following advantages:

1. Drainage is from the most dependent portion of the peritoneal cavity.

2. In a fair proportion of cases, it permits the cure of the patient by a less radical procedure.

3. In a fair proportion of cases, it permits the cure of the patient by a less radical procedure.

3. The convalescence of the patient, even after a hysterectomy, is more rapid and attended with less discomfort than is associated with the same procedure through the abdomen.

4. The restoration to health is expedited, and the patient is spared such sequelæ as ventral hernia and ventral adhesions.

5. In many cases, it permits the peritoneum to be closed over the vagina, the stumps *of the broad* ligaments being brought out so that all ligatures and raw surfaces are excluded from the peritoneal *cavity*, leaving opportunity for the formation of adhesions. The latter statement can not, of course, apply where extensive inflammatory collections and adhesions have existed previous to operation. In such cases, dependence must be placed on walling off the intestines with gauze to prevent contact with the raw surfaces.

DISADVANTAGES OF VAGINAL ROUTE.

The vaginal route has, as its opponents indicate, the following disadvantages:

1. The procedure necessarily must be, in many cases, a blind one, as extensive *adhesions must be separated* by touch.

2. Injuries to the intestines or previously existing intestinal sinuses are likely to be overlooked, fecal fistula may form and imperil life, or destroy the health and comfort of the patient.

3. Extensive adhesions of the intestines are unrecognized, or form subsequent to the *operation, and* lead to obstruction and consequent disaster. The initial adhesion need only be a small one on the outer margin of the coil of gut to become a serious menace. With this adhesion as a fixed point, peristalsis may lead to twisting of the loop and result in obstruction. An ob-

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* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

struction may exist which other peristaltic movements may undo, producing symptoms of intermittent obstruction, or the torsion may become aggravated.

ABDOMINAL ROUTE.

The abdominal incision in the median line is without doubt the procedure capable of the widest application. It affords ready access to the pelvis, and when required may be so extended as to permit the inspection and manipulation of the contents of the entire abdominal cavity.

Through this incision every stage of an intricate and prolonged operation is continually under observation, ready access is afforded for manipulation, hemorrhage can easily be controlled, and injuries to important viscera recognized and repaired. Operation through this incision is by no means a blind procedure. It is not surprising that its advocates should feel that it fulfills all the requirements and leaves nothing to be desired.

Observation discloses, however, that the victim of an operative procedure suffers greater discomfort during convalescence than is experienced by the patient who has suffered a similar or greater deprivation of organs by the vaginal route. Nature's barriers are necessarily broken down, and both peritoneum and incision are exposed to infection. The situation of the wound is not the most favorable for drainage, as a portion of the cavity, generally that which has been subjected to the greatest injury, is below the most dependent portion of the incision Drainage, consequently, must be against gravity. In acute infections, this defective drainage frequently compels the operator, in order to be safe, to do more than he would feel obliged to do had the vaginal route been substituted.

THE PFANNENSTIEL INCISION.

The Pfannenstiel incision, our third procedure for entrance of the abdominal cavity, is a curved incision, the convexity directed downward, just above the symphysis, passing through skin, superficial fascia and aponeurosis, exposing the pyramidalis and recti muscles. These muscles are separated from each other in the median line and the peritoneum is opened vertically. I have employed this procedure in over 200 abdominal sections and have found it especially acceptable in operations on the intrapelvic viscera. The muscle fibers being much more elastic than those of the aponeurosis permit a much more free exposure of the pelvis through a relatively small incision. In round ligament operations for retro-displacement it brings the operator directly over the ligaments he seeks.

In operations on the bladder, and in extirpation of the uterus for small growths, it is especially valuable. It is to be preferred in operations done on fleshy women, as the superficial incision can be made where there is the least deposit of adipose tissue. In closing the wound it has been my custom to close the peritoneum and muscle margins with a continuous chromic cat-gut suture drawn sufficiently tight to hold the surfaces in apposition and not constrict the muscle tissue. A second continuous suture unites the curved margins of the aponeurosis, and the third the edges of the skin. Particular care must be exercised to prevent any bleeding between the successive layers as a hematocele may form, which, if it becomes infected, will imperil the stability of the subsequent support.

ADVANTAGES OF PROCEDURE.

The procedure, in addition to the advantages named, has the following:

1. It permits a larger exposure of the field for a comparatively small incision.

2. As the interior and middle lines of suture closing the wound are at right angles to each other, the probabilities of subsequent hernia are lessened.

3. As the incision through the skin is, under ordinary circumstances, within the portion covered by the pubic hair, with its regrowth the site of the scar is completely obscured.

DISADVANTAGES OF PROCEDURE.

Its disadvantages are as follows:

1. It is of limited application and consequently unsuitable for the removal of fibroid tumors of any size.

2. The necessarily large opening of the cellular tissue makes it undesirable for the treatment of pus collections within the pelvis, as it is difficult to preserve the wound tissues from infection.

DISCUSSION.

DR. H. J. BOLDT, New York: I take decided exception to a statement by Dr. Montgomery as to the advantage of the vaginal over the abdominal operation. Dr. Montgomery said that convalescence was more rapid by the vaginal route than by the abdominal. The only advantage that I can see in the vaginal compared with the abdominal operation is the fact that there is some risk of subsequent ventral hernia and, furthermore, that there is considerable risk of intestinal adhesions to the parietal peritoneum. These are the chief dangers of the abdominal operation. I believe that those who have followed for many years the transactions of the New York Medical Society will perhaps remember that I was one of the first advocates of the vaginal operation. In fact, I was very enthusiastic about the vaginal operation twenty years ago, and up to fifteen years ago, but gradually I have limited the field of utility of that kind of work. There is no question that vaginal operations have their place in gynecologic surgery, but the field is more limited. I believe, in the hands of experienced operators than it was formerly. I have seen the work of the best gynecologists, exponents of vaginal operations, and it has confirmed my opinion that the operation has a more limited field than formerly was thought and taught. So far as my observation goes, in pelvic inflammation when there are many adhesions, its use is more limited than the abdominal operation, the advantages of which Dr. Montgomery has held before us. When, however, there is a full roomy vagina, and when the pathologic condition which we want to attack is in the cul-de-sac, the operation may be satisfactorily done by the vaginal route in most instances.

DR. RUFUS B. HALL, Cincinnati: I believe that the operation of vaginal section has a field, and likewise the abdominal operation. The real reason for doing a vaginal section on one patient and the abdominal section on another patient is *not* in order to get the patient up more quickly. Vaginal section should be done if a woman has an infection which, with operation by the abdominal route, will not be followed by the best results. Vaginal section is for temporary relief in one sense of the word. I would not carry the vaginal operation to the extent indicated in the paper. I would not limit my work by the vaginal section. In the septic cases, one does not want to give additional risk by having the pus reach the peritoneum. It is better to open the cul-de-sac and get rid of the acute infection. If the patient does not recover satisfactorily, one can do another operation later. I would not exclude the vaginal operation simply because of a narrow vagina. For the same reason, if there was infection and a large accumulation of pus, I would drain through the vagina for the temporary relief, and then when the acute infection was over I would do the other operation if necessary.

TRICHLORACETIC ACID.

W. H. FITZGERALD, M.D.
HARTFORD, CONN.

Numerous cases in my hospital and private practice treated with strongly concentrated solutions of trichloracetic acid prove to my satisfaction that we have in this preparation almost a specific for the great majority of diseases of the mouth, throat and cervical lymphatics.

In postoperative treatment of mouth and throat conditions trichloracetic acid prevents infections and secondary hemorrhage and enables the patient to swallow solid food without the slightest difficulty almost immediately following a painstaking application over comparatively dry raw areas. This is likewise true regarding cauterized surfaces and practically all diseases of mouth and throat and often one treatment will suffice.

Acute pain and swelling of cervical lymphatics disappears speedily (frequently within a few minutes) through applications within the faucial tonsil and about its base on the affected side. The entire tonsil may be covered if necessary and several applications may be made during one treatment. It is well to use the solution sparingly, however, although the only unpleasant symptoms likely to arise will be a slight dryness, preceded by a trivial stinging over the area treated. Preliminary cocainization, except perhaps in the nostrils, is seldom necessary. A strongly concentrated solution, as is well-known, alone or in conjunction with the actual cautery (inflammatory extensions are thus prevented) is most useful in the treatment of various infections of the nose and nasopharynx.

Dentists will find trichloracetic acid indispensable in diseases and postoperative treatment of the gums. As a disinfectant and deodorant in dentistry it will be found most efficacious. Trichloracetic acid will be found equally useful in the treatment of diseases of the mucous membrane and lymphatics elsewhere throughout the body. Chemists tell us it has no anodyne properties, but my experience, I believe, proves it to be one of the most remarkable of anodynes.

[COMMENT.—Our correspondent is rather enthusiastic in praise of trichloracetic acid. We agree that it is a valuable drug in certain conditions. It is now official, having been included in the last edition of the U. S. Pharmacopeia. The following appears in the "Physicians' Manual of the U. S. Pharmacopeia and National Formulary":

"USES: Chiefly as a chemical reagent; astringent, escharotic, hemostatic, to remove warts and other skin blemishes, in 10 per cent. water solution, astringent or hemostatic 1 to 3 per cent. solution, must be used with care."

The British Pharmaceutical Codex says:

"Trichloracetic acid is applied as a caustic to the skin, and is less painful than nitric acid; it has also been employed in strong solutions as a caustic in chronic pharyngitis. Weak solutions, containing 1 per cent. or less, have a powerful disinfectant action, and such solutions may be applied to wounds and ulcers or used in erysipelas and gonorrhea without causing irritation. It is rarely taken internally, but from 2 to 2.5 decigrams (3 or 4 grains) well diluted have been recommended in gastritis. Liquefied trichloracetic acid is a liquid prepared by the addition of 10 per cent. of water to the crystalline acid."—EDITOR.]

A STUDY OF MALARIA IN CHILDREN

B. B. SIMMS, M.D.
AND
B. B. WARWICK, M.D.
TALLADEGA, ALA.

The subject of malaria is generations old; the disease has ever been with us and probably will ever be, yet, notwithstanding that there has been research after research and study on study of it, there seem to be many facts in regard to its clinical history, its etiology and the life and habits of its causative parasite that are yet to be investigated.

Our investigations of the subject have had in view the establishment of two facts: first, the percentage of apparently well people who have the malarial parasite in their blood; second, the length of time that the parasite may live and propagate in the blood and cause no malarial paroxysm. Therefore our observations were made on the well instead of the sick; and, furthermore, these investigations have not been confined to children entirely, the majority of the subjects, however, were children. Because Talladega is a city of many schools, observations on school children are more easily made than on adults, and the children are more easily kept under constant observation.

These observations were begun in September, 1907, after the schools for the deaf mutes and blind had opened for the session of 1907-1908. Smears of blood were obtained from a total of 610 children and adults.

These blood specimens were obtained on slides in the ordinary manner and were stained with Jenner's, Wright's or Goldhorn's stains. Two hundred and ten of these specimens were obtained from deaf-mutes of both sexes and 85 from the blind, also of both sexes. The subjects ranged in ages from 7 to 20 years and came from different parts of the state. The remaining 315 were natives of Talladega, of whom 38 were children and 21 were negroes. The remaining 156 were men who were about their regular business. Among the deaf-mutes the plasmodia were found in 10.5 per cent. of the males and 6 per cent. of the females; among the blind, in 6 per cent. of the males and 3 per cent. of the females. This brings out quite a difference between the males and females; also between the deaf-mutes and the blind. We accounted for this decided difference by the fact that the females, as well as the blind, are in the house more at night and are better cared for, thereby lessening their liability to infection.

It was also noticeable that the majority of the mutes and blind in which the parasite was found were from the southern part of the state.

Of the 38 native children, the plasmodia were found in 8 per cent., and in 5 per cent. of the negroes. Of the 156 men the parasite was found in 11 per cent. We also found the plasmodia in 3 babies between three and seven days old, but in these the mother had previously had a paroxysm. Summing up the total, we found the plasmodia in 8 per cent. to 9 per cent. of the 610 cases examined.

Most of the patients whose blood contained the malarial parasite were kept under observation during the fall and winter. No quinin or tonics were given unless chills and fever developed, and then only sufficient quinin was given to control the paroxysm. Of those whose blood contained plasmodia only 3.5 per cent. developed malarial symptoms, and a majority of these had an attack of chills and fever in October, December and

February. In February there was an epidemic of influenza, and some of those infected with malaria had chills and fever during the attack of grippe. Of those infected with malaria 60 per cent were brought down with this disease and it was much more severe than in those who were not infected.

It seems, from these observations that many people carry in their blood the malarial parasite for many months without active symptoms of malaria, for we have observed the plasmodia from time to time for a period of from five to six months during which no paroxysms occurred.

The probable reason for the absence of malarial symptoms is that the number of parasites in the body is too small, since it is estimated that there must be from 200,000,000 to 300,000,000 in the human system to produce the paroxysm. It also seems that the intervention of some other disease causes the parasite to increase, thereby giving rise to malarial symptoms.

OBSTETRICS IN A NORTHERN MINING COMMUNITY

FREDERICK BARRETT, M.D.
EVELETH, MINN.

A mining hospital practice on the northern range affords not only a variety of surgical, medical and obstetric experience, but also work in a veritable international congress. The birth-rate statistics are notably high in mining communities, so that obstetrics forms an important branch of the service. Being for the most part among the laboring classes, where the "higher civilization" with its concomitant constricted waist lines and atrophied abdominal muscles, has not left its stamp there are fewer abnormal cases than in more metropolitan sections.

Some of the phases encountered among the conditions to be contended with would undoubtedly greatly shock a practitioner who had been accustomed to engagement beforehand, and the opportunity to outline instructions for his patient—or to the interne accustomed to ideal preparations and conditions in the maternity wards.

Among the classes mentioned, one is rarely engaged or summoned, until labor is actively established and the conduct of the case under the circumstances sometimes presented is a severe test of one's resources. These unusual situations are not without their humorous sides at times. For instance, a family of five occupied one sleeping room (the rest of a fairly large house being devoted to boarders), and the three children in a sort of a trundle bed at the foot of the mother's bed stood up, ranging their little heads in a row over the blanket which had been thrown over the foot of the bed for a screen and curiously watched the advent of a new brother. Their Polish mother did not seem at all perturbed over their marked interest in her progress.

On another occasion an Austrian mother, in her hour of deep pain, was supported at her elbow by a bright little brown-eyed babe of thirteen months, who never wavered in his night-long vigil and when she could not contain her outcries the little chap would cling about her neck in tearful sympathy.

A Finnish husband about to become a father, was so pessimistic about the chances of his firstborn emerging alive that he wanted to wager $5 on a stillbirth. It was explained to him that he was practically a sure loser, but he pressed the matter till the bet was accepted—though, be it added, the amount was allowed to apply on his fee. I have seen a Russian woman in a filthy bed within a few moments of my arrival give birth to a child on a dirty gunny sack taken from the floor to protect the mattress. She was as thoroughly cleansed and provided for as possible under the circumstances, and her parturient period was without fever and uneventful. On the other hand it is not surprising to learn that, although this was her ninth labor at full term, she had no living offspring.

The English women, principally from the mining regions in Cornwall have large families and mother them well. I have seen more postpartum hemorrhages among French-Canadian mothers than among any other nationality. Jewish women make most solicitous and tender mothers. They require (and are tendered, as a rule) an immense amount of sympathy. Italian women make quite a function of the arrival of an heir or heiress, and it is difficult to interdict entirely the use of wines and fancy alcoholic preparations. Scandinavian women as a rule, are well built for motherhood, but are not, in my opinion, so hardy at such periods as the Latin races.

A little diversion from routine was afforded in one case by an over-zealous and shaggy Fido who ensconced himself under the bed of his Swedish mistress and resented my presence with a furry onslaught whenever the woman in her extremity of pain lamented with exceptional fervor. I have seen a little newcomer born in weather 44 degrees below zero, with no fire or heat in the apartment, whose first breath was a visible one.

The usual statistics obtain as to twin pregnancies. I have had but five cases of eclampsia in about 750 births, and in none of these had there been an opportunity for urine or other examination beforehand. I may add that all but one of them survived. This death, one from infection, complicated by puerperal mania, and one from placenta prævia, comprise the mortality list for the above mentioned series of cases.

About two-thirds of these cases occurred in the night, and almost one-third of the patients were primiparæ. The oldest mother was 44 (this was her fourteenth confinement) and the youngest 16 years old.

LIGATION OF THE UMBILICAL CORD.

C. P. COOK, M.D.
WATROUS, NEW MEXICO

In a series of 100 cases I employed the various textbook methods of tying and dressing the umbilical cord *and found none of them to my liking. In attempting to* eliminate the objectionable features of the various methods I evolved the following which may not be altogether new, but is in my opinion far superior in results to those in use by the majority of practitioners.

The tying of the umbilical cord is the first great crisis in the life of the new-born babe. His inheritance to a life of passive nutrition being cut off, his food and oxygen must be acquired from a new source and assimilated in a new way.

The usual method of tying the cord two centimeters from the body of the child is most objectionable from a standpoint of drainage. Two grams of decomposing tissue drain their toxins into the circulation of the infant at the most critical period of its existence. This produces a toxemia and often causes a pyrexia which lowers the child's resistance to infection and disturbs its digestion and excretions, thus creating a condition which I believe has much to do with second and third day cross babies. In addition, the cord is frequently inspected once daily by the nurse, thus increasing the chances of infection of the stump: and it must be remembered that the granulating surface left after separation of the cord is not immune to infection.

The ideal surgical procedure would be to amputate the cord at its union with the integument and close the wound with sutures, but the use of this method in private practice would not be practical.

In a series of seventy-five cases I have tied the cord at its union with the cutaneous surface and cut it two centimeters distal to the ligature, thus draining the stump from instead of to the child. I use heavy braided silk for ligature and dress with aseptic gauze and adhesive straps to prevent movement of the dressing. The adhesive straps are necessary, as without them the dressing is liable to be moved in handling the child, thus causing premature separation of the cord and hemorrhage, an accident which happened in two of my cases before I began the use of the adhesive straps. The hemorrhage, however, was of little significance in either case.

Under this method the cord separated on the third day in 70 of the 75 cases, leaving a healed, not a granulating surface, and many of the first week disturbances of infancy were avoided. There was disturbance in micturition in but 3 of 75 cases so treated, and 50 per cent. less cross babies than under other methods.

I found pyrexia in 20 per cent. of 50 cases in which the cord was tied two centimeters from the integument and in less than 3 per cent. of 75 cases in which the cord was tied at its union with the skin.

The principal advantages of this method are the avoidance of sapremia and the fact that the period of possible infection is greatly lessened if not eliminated.

LARGE DOSES OF ANTITOXIN IN DIPHTHERIA.

REPORT OF A CASE.

A. C. McCLANAHAN, M.D.
VICTOR, COLO.

Although the use of antitoxin in the treatment of diphtheria is now practically universal, there is still more or less doubt as to the expediency of administering large doses after ordinary doses have failed to produce any effect. In fact, the question of dosage is the only question that remains to be answered, so far as the therapeutic use of antitoxin is concerned. The determination of the requisite dose in a given case will probably soon be reduced to some trustworthy and generally practicable method: but until that has been done our only guidance will be the experience of those who have used large doses. Toward the enrichment of the literature of that experience I wish to contribute the following mite:

History.—On July 11, 1908, I was called to see a child, 8 years of age, who complained only of sore throat. Examination disclosed an exudate limited to the tonsils and resembling the exudate of follicular tonsillitis; the tonsils, however, were not much swelled. The pulse rate was 135 a minute, and the temperature was 103. Tonsillitis of the most innocent type may raise the temperature much higher than this, but in that case there will be considerable swelling and other distinct signs of an intense local inflammation. Such signs were absent here.

Course of Disease.—As I was in doubt regarding the diagnosis I used no antitoxin and even neglected to send a smear from the throat to the state bacteriologist. On the following day (July 12), the patient was worse. Both nasal passages were completely clogged, and although the exudate in the throat, where it could be seen, was more cheesy than membranous and was still limited to the tonsils, I was convinced that the disease was diphtheria, and I accordingly administered 12,000 units of antitoxin in two doses separated by an interval of six hours.

July 13: Temperature was 104.5 and the pulse 150. The patient lay in a deep stupor from which it was difficult to rouse her. A white exudate now extended across the posterior wall of the pharynx, but still avoided the uvula and the pillars of the fauces. A thin, serous fluid trickled from the nostrils. Nasal breathing had been entirely suspended, and the mouth was wide open. I now took a smear to transmit to the state bacteriologist, although there was no doubt in my mind as to the nature of the disease or as to the inadequacy of the doses of antitoxin that had been administered on the previous day. I accordingly administered 23,000 units in the space of six hours.

July 14: As there had been no improvement, I gave all the antitoxin that was left in town, which was only 12,000 units. The patient's nose was now considerably swelled; the lids of the left eye were thickened and reddened by an intense inflammation, and the eye itself appeared to protrude distinctly as if there were a unilateral exophthalmos.

July 15: The patient's condition was unchanged, and I was now confronted by the angry opposition of the frightened neighbors, who shouted across their back fences that I was killing the child by injecting a mysterious poison into her veins. I quickly quelled the mutiny in the patient's household, and, as fresh supplies of antitoxin had arrived, I injected 19,000 units at a single sitting. The state bacteriologist's report was received, and it confirmed my diagnosis.

July 16: There was some improvement. The pulse was about 140 all day; the temperature ranged close to 105. The nose was still completely clogged, and the protrusion of the left eye was still present, but the exudate was disappearing from the tonsils, and the pulse was of a better quality. On this day I gave no antitoxin.

July 17: There were slight indications of improvement everywhere except in the temperature, which was 104.8. Accordingly, after waiting till evening, I injected 9,000 units more.

July 18: The pulse had fallen to 100 a minute, and in every way the patient was better.

July 19: The protrusion of the left eye had disappeared, the inflammation of the lids had been replaced by a paralysis of the upper lid, the temperature was normal, the pulse rate was 86, and the patient was breathing through her nose and clamoring for more food.

Cathartics, antiseptic sprays and gargles, strychnin and whisky were used as indicated, and were administered by a trained nurse; but the point of interest is that in the space of five days 75,000 units of antitoxin were injected without any evidence that any of it had done any good until the last 9,000 units were used. All the antitoxin used in this case was fresh and was the product of the two principal laboratories in America.

Generosity of Surgeons.—John C. Munro, Boston, in the address in surgery before the Canadian Medical Association, said that a significant quality that belongs to our profession is the generosity of the surgeons of one locality toward those of another in freely giving and receiving the good things that spring up in our art. It is a refreshing sign of broad culture and does much to destroy the petty jealousies that are a heritage of past generations.

A SIMPLE RESTRAINT.

CHARLES S. WHITE, M.D.
Associate in Surgery, Emergency Hospital
WASHINGTON, D. C.

It often becomes necessary to restrain, for a brief period, some patients admitted to the accident ward of a hospital. In the semi-conscious state following the grand mal of epilepsy, in hysterical males particularly, alcoholic delirium, concussion of the brain, cocainism and similar conditions of cerebrospinal excitability or incoordination, temporary measures are demanded until therapeutics or hydrotherapeutics can be rationally employed. The majority of such patients will not remain in bed, moral suasion is useless, and sometimes the patients are perverse, combative, pugnacious and even homicidal.

In the emergency hospital, at my suggestion, we have had made a hammock of one-fourth inch cotton rope, seven feet six inches long, six feet wide at its center, tapering to three feet at each end. From the ends guy ropes extend two feet six inches and terminate about an iron ring three inches in diameter. To use the hammock as a restraint, it is spread on a bed, the patient placed on it, and the sides folded over to meet in the middle line above him. The ends and free edges are then laced up by a piece of rope about twelve feet long, passing through the meshes, and securely tied. The patient becomes enclosed in a torpedo-like rope lattice fitting him snugly and preventing excessive movements or his escape. The hammock is then suspended from hooks fastened in the wall. The bed can be removed or left under him.

The constant use of this simple apparatus for nearly a year has proved its merit. It is comfortable, minimizes the possibility of injury and it is clean, in that any dejecta escape at once, and the patient is not compelled to lie in them. The patient is rarely kept in the hammock for more than three or four hours and not uncommonly he is aroused from a peaceful sleep to be discharged. The material for the entire outfit costs less than four dollars and any one with a nautical turn can knit the hammock. It can be scrubbed and sterilized without injury.

The Farragut.

A SIMPLE DEVICE FOR FACILITATING SPHYGMOMANOMETRY.

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NEW YORK

The double-bulb sphygmomanometers, such as the Riva Rocci and the Cook, are comparatively easy to use. Unfortunately these instruments are not available for recording diastolic pressure, and the large netted bulb is not at all durable. In fact, it is apt to blow out at the most inopportune moment. In using Janeway's or other single-bulb sphygmomanometer considerable skill is required. The novice in particular is apt to give a very jerky performance. It is certainly not at all rare to see two hospital internes taking a blood pressure where one ought to be sufficient, the assistant in each case manipulating the needle-valve while the operator controls the pulse and bulb.

That this difficulty is a real one is shown by the various suggestions which from time to time have appeared in the medical press. The tension indicator of Dr. Louis F. Bishop of New York, using water pressure, is a sort of crude protest against the difficulties encountered in using the fairly accurate mercury manometer. Dr. W. A. Ruble,[1] of Washington, suggests that the nebulizer compressed air tank be utilized in place of the bulb. Of course we are not all provided with nebulizer tanks and such an apparatus is not portable. In addition to this, unless the regulator is very carefully adjusted there is apt to be a shower of mercury.

Since last November I have been using on my Janeway sphygmomanometer a little device which enables the operator to keep one hand on the pulse and one on the bulb from start to finish, and has much simplified the technic and shortened the procedure. This consists in substituting an ordinary atomizer bulb for the Politzer bag, and placing a check-valve between this bulb and the needle-valve. This check-valve is of the type used in pneumatic tires, the spring being somewhat weaker. It can be regulated to a nicety without trouble, and once properly adjusted need not be touched for months. The proper adjustment allows the mercury to sink back very slowly when the bulb is released. If it does not fall at all the valve is too tight. If it falls too rapidly the valve is not tight enough. With the correct adjustment the mercury can be brought with ease to any desired point on the scale and held there indefinitely by slight pressure on the bulb.

The use of this little valve permits the determination of the diastolic pressure. It is much easier to handle than the double bulb and much more durable. It has been in continuous use for several months now on my service at St. Vincent's Hospital and has given much satisfaction to the internes.

They can be made by any one, the only difficult point being the proper adjustment of the spring and plunger, each individual valve being tested on the sphygmomanometer and brought to the proper tension.

40 West Sixty-eighth Street.

THE RELATION BETWEEN WEIGHT AND AGE IN THE FETUS

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The relationship between the length of the fetus and its age is easily kept in mind with the aid of Haase's rule, viz., during the first five months of gestation the age in months is multiplied by itself, and during the latter half of gestation the age is multiplied by five, the resulting figure being the length of the fetus in centimeters. I have endeavored to formulate a rule which shall furnish an equally easy method for recalling the weight of the fetus at any given age.

According to Roberts,[2] the slower growth of the fetal head during the later months of pregnancy is compensated for by the more rapid growth of the limbs, and the formation of dense bony tissue is counterbalanced by the formation of light fatty tissue, the result being that the specific gravity of the fetus is not materially altered, and its volume, and therefore its mass also, are proportional to the cube of any linear dimension, or to the cube of its age. Accordingly, he takes the cube of the age in calendar months and divides this by 104, thus obtaining a figure for the weight in avoirdupois pounds which agrees closely with the actual weight as determined by different observers.

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[1] The Journal A. M. A., June 6, 1908.
[2] Lancet, Feb. [illegible], 1908, p. [illegible]97.

My rule gives a good approximation to the actual weight without necessitating any arithmetical operations except such as are easily performed mentally. It is as follows:

From the age in months subtract two, square the difference and divide by two. The result gives the weight in hundreds of grams.

That is, at the seventh month, 7 − 2 = 5, $5^2 = 25$. $25 \div 2 = 12\frac{1}{2}$, the weight accordingly being 1,250 grams. At the tenth month (i. e., at term, the word month being used throughout this article in the sense of a lunar month of four weeks), 10 − 2 = 8, $8^2 = 64$, $64 \div 2 = 32$, weight 3,200 gm.

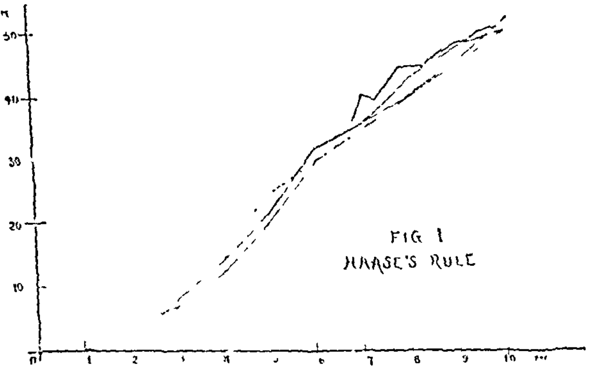
FIG 1
HAASE'S RULE

The relationship will probably be more easily remembered in the form in which I have stated it than as the equivalent algebraic formula

$$w = 100\,(m-2)^2 \div 2$$

which of course can be used instead if preferred.

I have diagrammatically indicated the relationship of length and weight to age by the usual graphical representation. Any point on the curve which is situated at a distance to the right of the vertical line corresponding to the age as indicated on the horizontal scale will be found at a distance above the base line corresponding to the length (Fig. 1) or weight (Fig. 2) of the fetus at that age. Time is expressed in lunar months, length and weight in the customary metric units.

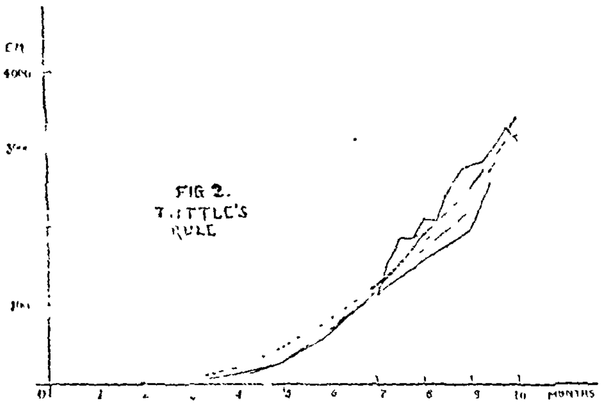
FIG 2.
TUTTLE'S RULE

The dotted lines show the lengths and weights as calculated from the formula, while the solid lines give the actual measurements (generally averages) according to each of several different observers. It will be seen that the dotted line in each case follows the curve of actual length or weight closely enough for practical purposes; in fact, it generally diverges less from the general trend of the curves than they do from each other.

Therapeutics

RHEUMATISM.

Dr. Joseph E. Winter, Professor of Diseases of Children, Cornell University Medical College, read an interesting paper on this subject before the Alumni Society of Bellevue Hospital, on Nov. 6, 1907. He associates acute rheumatism with chorea and tonsillitis as having the same etiologic factors and the same complications, with, of course, endocarditis as the most important sequence. He does not mention or discuss the germ theory of acute inflammatory arthritis, but believes that hyperacidity of the system is sufficient to cause acute inflammation and account for all of the symptoms. While acute rheumatic inflammation may remain in one or more joints for a shorter or longer period, even months, the inflammation may then cease and the joint become perfect, there being no permanent impairment and no disorganization of tissue. "At any time in the course of a rheumatic fever the heart, the lungs, or the nervous centers may become involved and terminate life abruptly."

Winters believes that there is a positive chemical antidote and that this antidote is organic. Nature's antidote is natural salicylic acid. The synthetic salicylic acid, he believes, has no effect on the disease. Salicylic acid is quickly converted by the alkaline secretion of the intestines into an alkaline salicylate, sodium salicylate, while in the blood the bases are set free and salicylic acid is at once eliminated and appears in the urine in a few minutes. Winters believes it is this free base in the blood "which neutralizes the rheumatic virus," as it forms a chemical union with it, and as it must unite with an acid, therefore he reasons that the cause of rheumatic fever is an acid. As a further proof of this hyperacidity of the system he cites "the profuse, drenching, sour-smelling acid perspiration of rheumatics," and states that the saliva becomes acid, the urine is hyperacid, and the feces become acid in this fever. He therefore states that salicylic acid in its chemical ability to combat in the blood this acid poison is in consequence a specific in rheumatic fever, although it does not cure rheumatism. He believes, with Dr. Andrew H. Smith, of New York, that salicylic acid will cause rheumatic patients to become three-fourths well, but the other fourth of the disease lurks in the tissue fluids, and this fourth it is most difficult to eradicate. The salicylates, Winters claims, liberate their bases in the blood. They never reach the tissue fluids.

To neutralize this tendency to acidity in the tissue fluids he believes that we must administer the vegetable foods which contain three or four times as much basic material as animal food, and thus supply a chemical antidote for the remaining fourth of the disease. In other words a patient with acute rheumatic fever is three-fourths cured by salicylates, and has the remaining fourth cured by a vegetable diet. Spontaneous cures or cures without drugs, he believes, are effected by this property of a suitable diet, viz., the ability of vegetable foods to neutralize the acid in the system.

"If for any reason the blood becomes less alkaline there is a disintegration of red blood cells, i. e., rheumatic anemia, often the only symptom of rheumatism in a child."

Winters thus sums up his belief: "In profound rheumatic states, as in hyperpyrexia, sodium carbonate of the plasma is decomposed and carbonic acid set free. Accumulation of carbonic acid shuts off oxidation. Menacing symptoms in rheumatic hyperpyrexia are due to rapid, large withdrawal from the blood of the basic element, sodium; fatal reduction in alkalescence of blood; liberation of carbonic acid; arrest of detoxicating oxidative processes." He believes this explains rheumatism from muscular and articular soreness following unusual exercise to rheumatic anemia and rheumatic hyperpyrexia.

A growing child is always on the verge of an excess of acid products from its metabolism because it uses so much of the basic mineral substance for its growth. This tendency is shown by the frequent attacks of gastrointestinal disturbance, generally due to an excessive acidity, with urticaria, tonsillitis, and other mucous membrane inflammation.

Winters believes, as is now generally admitted, that chorea and acute inflammatory rheumatism are closely allied etiologically and closely allied in their complications, the main complication in both instances being an endocarditis. He interprets the inability of salicylic acid to cure chorea by the hypothesis that the tissue fluids are abnormally acid, which parts, as previously stated, he believes salicylic acid can not reach.

In chorea the heart should be as carefully watched as in rheumatism, and the same care of the diet, and the same rest should be urged.

Winters believes that recurrent tonsillitis and frequent stomach upsets are both caused, in children, by too much animal broths and sweets, and that both are caused by the disturbance of metabolism described above as occurring in rheumatism.

In rheumatism, if the tongue is coated, he advises the free administration of calomel followed by rhubarb and soda, as:

For a child ten years old:

℞.	gm.		
Hydrargyri chloridi mitis	10	or	gr. ii
Sodii bicarbonatis	50		gr x

M. et fac chartulam I.

Sig.: To be taken at once, with plenty of water or milk. To be followed by:

℞.	c.c.		
Misturæ rhei et sodæ	100	or	flʒiii

Sig.: A teaspoonful, with water, three or four times a day, as deemed advisable.

If this preparation should cause too much activity of the bowels the following should be substituted:

℞.	gm.		
Bismuthi subnitratis	5	or	gr. lxxv
Sodii bicarbonatis	10		ʒiiss

M. et fac chartulas 20.

Sig.: A powder every six hours.

He then begins the use of salicylic acid, and states that "a child of ten years may be given .60 gram (10 grains) every two hours for twenty-four hours, and thereafter according to effect."

[For the administration of salicylic acid or some preparation containing salicylic acid see THE JOURNAL, July 25, 1908, page 318.]

As above stated, neither salicylic acid nor any other medicinal treatment will cure rheumatism. The diet is paramount, and Winters urges that "while a vestige of active rheumatism tarries milk must constitute the sole diet." In other words, milk is a purin- (uric acid forming) free diet and contains an abundance of phosphate of potash. All active tonics, alcoholics, manufactured liquid beef preparations, and all home made meat broths prevent the success of the above simple treatment of rheumatism. As there is profuse sweating in this disease the patient should be urged to drink plenty of pure water. As soon as the local evidences of rheumatism have disappeared the diet should be increased in the following manner:

First, cereals may be given, well cooked and served hot with butter and salt or with milk, but without sugar. The cereal may be rice, hominy, cream of wheat, or oatmeal. No malted food, or predigested food, or so-called baby food should be a substitute for one of the above cereal foods, freshly prepared.

The next increase in the diet is the addition of a baked potato and bread, and soon green vegetables may be allowed, excluding, however, beets and sweet potatoes. If tomatoes are craved they may be eaten raw but without vinegar or sugar.

Next, fresh fruits should be added, and these should be taken raw, not cooked. Grapes and grape fruit should not be allowed. Winters states that one ounce of lemon juice contains 3 grams (45 grains) of citric acid, and as citric acid is an antirheumatic, lemon ranks high as a fresh fruit in rheumatic conditions. All these vegetable acids oxidize to carbonates after ingestion. Winters emphasizes his belief that rheumatic patients should not eat sugar until long after complete recovery. When meat is added to the diet it should not be as broths, but in the form of meat, and whether it is red or white meat is indifferent.

Any food or drink that tends to cause intestinal indigestion or fermentation is likely to precipitate a lurking rheumatism. Hence fancy dishes and all sweets, even ice cream, alcohol in any form, and even tea and coffee, if they cause the least indigestion, should be prohibited. Alcohol in any form should generally be permanently eschewed.

A child with chorea should have a diet as rigid as the above advised for rheumatism, depending upon the intensity of the disease. It should also not be allowed at the table that it need not crave the food that it sees provided for the rest of the family. It must be very positively declared that no one shall surreptitiously give a choreic child sweets or sugar in any form. The bowels should be kept in good condition, perhaps best with the above rhubarb and soda mixture. If a stronger laxative is needed it should be administered, and none is better than an occasional dose of castor oil for such a patient. A patient with chorea should be kept at absolute rest and as quiet as possible, if the disease is at all severe, and the calmer the nurse or attendant of the child, and the fewer people or children the child sees, the more rapidly will its chorea abate.

Small doses of bromid of sodium may be necessary to aid in diminishing the muscle restlessness, as:

For a child ten years old:

℞.	gm. or c.c.		
Sodii bromidi	10	or	ʒiii
Aquæ	100		flʒiv

M. et Sig.: A teaspoonful, in water, three times a day, after meals.

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[*For other information see second page following reading matter*]

SATURDAY, SEPTEMBER 12, 1908

THE CALL TO HEALTH

The important features of the present movement for better sanitary conditions are very ably summed up by Prof. W. T. Sedgwick[1] in the annual address in medicine at Yale University. One or two points deserve special attention, since they are not always *included* in the popular conception of the work. Professor Sedgwick mentions, as one of the foremost responses of the nineteenth century to the call for better living, the temperance movement which started a century ago and which in its various other aspects has become so familiar to us that we are liable to overlook its sanitary importance. When one considers in detail the relations of alcoholic indulgence to disease, the numerous and important ailments of which it is the direct cause, to say nothing of its indirect influence on human misery and degeneracy, one can hardly avoid realizing that it stands almost, if not altogether, in the first rank of the enemies to be combated in the battle for health.

In the public mind, however, the sanitary bearings of this subject are hardly considered and it is satisfactory to have them thus emphasized by Professor Sedgwick, whose words we quote as follows: "*Under whatever* form and however fanatical or foolish, or at times even harmful, he may have been, the temperance or prohibitionist agitator has always urged the salvation of the body as well as the soul, the conservation of family life threatened with ruin by drunkenness, the social significance and the economic importance of temperance, and even abstinence, as regards alcohol." Any great general movement for sanitary reform which ignores the evils from the use of stimulants and narcotics leaves a vast gap in its line against the common enemy, and whatever may be the practices or prejudices of some of its individual members, the medical profession as a body should stand for temperance as one great essential of public health. That there has been too much neglect of the matter in the past is all the more reason why the profession should do its full duty now and in the future.

Another feature of interest in the address is the announcement of the author's work in connection with Mr. Scott MacNutt verifying the statement of the sanitary engineer, Allen Hazen, that for every death from typhoid fever avoided by the purification of a public water supply two or three deaths from other causes are also avoided. They have found this statement even conservative, and among the other diseases they particularly specify pneumonia, tuberculosis and bronchitis as well as infant mortality. They naturally ask whether this means that these are also water borne, or whether polluted water somehow depresses the vital resistance against the attacks of the micro-organisms of these diseases which the system would otherwise successfully resist, and they are still at work on this problem. A preliminary *communication on this subject is contained in* the same number of *Science* and the full results of their study with statistical tables, diagrams, etc., and discussion of the subject will be published in the near future.

It is perhaps a little unfortunate that Professor Sedgwick in his opening paragraphs, and to some extent elsewhere in his address, suggests the assumption that the ideal of a better future is in any way hostile to such interest in the present life as is essential to proper care for its preservation. We doubt whether physicians have often made this observation; *in fact, to the majority of* mankind the belief that this life is the prelude to a better one makes it the more worth living, and it certainly is not so strong in most of mankind as seriously to counteract the natural instinct of self-preservation. We mention this as what *we believe to be a medical fact*, entirely apart from any special religious significance it may possess. The voluntary quitting of the present stage of existence is certainly not so common among those who are hopeful in this regard as among those who are pessimistic, and the former is certainly a better mental condition in which to meet disease.

HONESTY IN ADVERTISING

The underlying principle of the campaign against fraud and misrepresentation in the proprietary medicine business is honesty in advertising. The essential requirement is: "Tell the truth—the whole truth." It would be difficult to formulate a simpler or more reasonable demand, and yet in spite of its simplicity—or is it because of it?—the opposition to the propaganda for reforms in proprietary medicines has been enormous. This has come not only from manufacturers whose methods and products alike were fraudulent—from such, antagonism was expected and desired—but also from firms of high standing who have insisted, to all intents and purposes, that honesty in advertising is Utopian and visionary. The reason for this attitude is not far to seek. The belief expressed not long ago by the *Cumberland Presbyterian*, that "virtually all advertisements are lies"[1] has been very generally *held*. Commerce has sanctioned "justifiable exaggeration," so long that it is impossible to decide where "justifiable exaggeration" ends and actual lying and fraud begin. Because of the peculiarly vicious results of such a policy in connection with advertisements of medicinal agents the medical profession went at the problem vigorously with the aid of the Council on Pharmacy and Chemistry. About the same time, *Collier's Weekly,* in the Great American Fraud articles, took up the fight for honesty and decency in regard to "patent medicines," and at last the public awoke to the true condition of affairs. This awakening of the public conscience was materialized in the Food and Drugs Act, a law which has indirectly made the advertising of foodstuffs comparatively free from fraud. Manufacturers of worthy products within the province of the act have had their eyes opened to the fact that truthfulness in advertising is a splendid asset and that the unscrupulous manufacturer and the competitor with an inferior product are being eliminated. This having been demonstrated, manufacturers in other commercial lines are beginning to take action for the restoration of commercial morality. Such a policy was foreshadowed in the resolutions adopted by the Associated Advertising Clubs of America last winter, which was referred to at the time.[2] Another notable proof of this awakening is seen in the recent action of the National Association of Piano Dealers. This body has endorsed and distributed an appeal for the prevention of fraudulent advertising in its own domain, in a series of resolutions which are presented elsewhere[3] in this issue.

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[1] Science, August 14.

[1] Quoted from Literary Digest, Sept. 21, 1907, 412.

This action of the piano dealers' association was taken in consequence of a remarkably able address by Lewis H. Clement, at its annual convention recently. In his prefatory remarks, Mr. Clement said:

> "A salesman who, through misrepresentation, persuades a customer to buy a thing he does not want, in belief that it is what he does want, deserves dismissal, and a firm which permits such misrepresentation deserves public condemnation. To publish misleading advertisements which not only deceive a large number, but tend to undermine that confidence on which all business rests, is far more discreditable and deserving of condemnation. Dealers insist on honest statements from manufacturers and their representatives. Their customers' rights are no less."

We may now expect other branches of commerce to take action on the subject of fraud and misrepresentation in advertising in their own particular lines. It may thus come about that at no far distant date we shall see commercial morality liberated from the slough of trickery and deceit, and planted on the firm ground of honesty and square dealing.

Meanwhile we may congratulate ourselves on the fact that so far as our own special aspect of this crusade is concerned, the widening circles have passed beyond the confines of this country. We cordially hail our new allies in the world of general commerce, for every step gained by them means the breaking down of so much entrenched resistance to the propaganda for honesty in the promotion of proprietary medicines.

PHYSICIANS AND MEDICINE AND MEDICAL TEACHING.

The comic papers delight in making the medical profession and medicine the butt of ridicule. For legitimate criticism and the humor that is inevitable in all things human, there can be no resentment. Many of the expressions used with regard to the profession, in the light of what it has accomplished for public health and modern philanthropy, are so ungenerous, however, as to be rather painful reading. The writers of no nation have been more free with the pen in this matter than have the French, and though Gallic humor and French wit assume the license to play around everything in life, no matter how serious, with a bitingness unexampled elsewhere, it is evident that the aspersions on the medical profession have not been without resentment, even in France. In the *Revue des Deux Mondes* (June 1) Professor Charles Richet has an article on *La Médecine, les Médecins et les Facultés de Médecine,* in which, while admitting that the medical profession can not hope to escape criticism in a time of universal criticism, he replies to certain aspersions which are unfounded.

He states forcefully the objections that are made against modern scientific medicine, its impotence in the face of cancer, its inability to stop the progress of infectious disease once it has taken hold, its utter failure with regard to the serious diseases of the heart and the liver and the internal organs generally, its inability to do away with infant mortality, that while there has been boasted progress in nervous diseases, this has been entirely in the line of diagnosis and not of treatment. He admits that there is not a little justice in the objection that many diseases develop in just the same way, whether under the care of a skillful therapeutist or left practically untreated. Patients who are going to recover do so. Above all, he admits the justice in the criticisms with regard to the vogue which certain new remedies gain without due reason. As the French comic papers sometimes put it, when a new remedy is in the hands of the medical profession: "Hurry and take it while it still cures, for soon it will be found to be of no value."

Professor Richet admits that many of these criticisms have a certain basis of truth, but declares that their bitterness is entirely uncalled for. In terms very nearly the equivalent of a striking expression frequently quoted that: "Life is a dangerous thing at best, and very few of us get out of it alive," he says that death is in the world and physicians are not expected, even by those who have the most implicit confidence in them, to stay its progress. The rôle of the physician, he continues, has been admirably defined: "He cures sometimes, he relieves nearly always, he always consoles." Even if he can not cure the unfortunate victim of cancer of the stomach, the physician can bring him so much relief, he can render digestion so much less painful, he can make the nights so much less cruel, he can save him so much agony, that the patient comes to consider him as almost superhuman in his power for good, and though the disease will not be cured, the rôle of the physician is one of the most beautiful and most efficient in the whole sphere of human action.

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[2] THE JOURNAL A. M. A., Feb. 29, 1908, p. 703.
[3] Miscellany Department, Page 932.

Professor Richet points out how, in spite of the many uncertainties that are left in medicine, medical science has so developed in the last two or three generations, that the practice of medicine is more exact than it was a half-century ago, and is daily becoming more so. "Patients still talk of the many different diagnoses of the same trouble that they receive from physicians, but that is because not a few of the physicians to whom they go have not been thoroughly trained. In the ordinary hospital examination for interneship, the young physician applicant is asked to examine a patient, and usually the case picked out will not be very simple, yet, in more than nine times out of every ten there will be perfect agreement among the group of hospital physicians as to what the malady is, and as a rule the young physician will make the diagnosis correctly."

Even in maladies in which a physician can do little to prevent them from running their course, his presence and the knowledge that he is watching to avert complications, give reassurance and mean so much to the patient that it does more to increase that vital resistance by which disease is thrown off than anything else that could be done for him. "It is not the fault of medicine if Nature cures certain diseases, and, on the other hand, it is not the fault of medicine if it can not cure all diseases." The human machine tends to wear out, and cure would in many cases mean the re-creation of special parts for it. Medicine can not cure in these cases, but while it is without resources to circumvent death, it is all powerful in the remedies that it has to prevent pain. The saddest thing in human history is the amount of pain that men formerly had to undergo without any possibility of relief. Now there is scarcely any pain that can not be relieved in a comparatively short time.

While the humorists still continue to urge certain objections against medicine, they are mainly exposing their own ignorance as to recent developments and are doing harm just to the extent that they foster a lack of popular confidence in physicians. It is only the healthy who make fun of the physicians. Even the bitterest critic calls a physician when he is ill, and those who have had most to do with physicians because they have been ailing for long years, not only have the most confidence in them, but come to look on them as benefactors of mankind.

There are many other well-put answers to criticisms of present-day medicine in Richet's rather lengthy article, and those who read French will find an entertaining hour in perusing it. There is scarcely a criticism of modern medicine that does not find a judicious discussion here, from the use of placebos—for Professor Richet believes in the old proverb, "Better a doubtful remedy than none, provided always the remedy does no harm"—to the most recent position taken by physicians in France with regard to alcohol.

THE U. S. PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE PERSONNEL BILL.

The problem of establishing a national department of public health is one that will require careful consideration and possibly much time. While awaiting its solution, there is another matter that should have immediate attention. The salaries of the officers of the U. S. Public Health and Marine-Hospital Service were fixed originally at the same figures as those of the medical officers of corresponding rank in the army and navy. But recently bills were passed by congress raising the salaries of officers in the medical departments of the army and navy. A similar bill correspondingly raising the salaries of officers in the U. S. Public Health and Marine-Hospital Service was introduced and passed the senate; it did not, however, pass the house before adjournment. The men in this department, in the piping times of peace, are doing a work no less arduous than do the medical officers of the fighting service of our government in time of war. Many of them are constantly on the firing line, and no small number of them have lost their lives in fighting epidemics. On many occasions they have demonstrated that their service is invaluable to the United States and to each one of its component parts. Even with the increase in pay granted under the bill mentioned, these medical officers will be none too liberally paid, and to make them drag out perhaps years of further work at the present inadequate compensation, while we are waiting for a proper solution of the public health question, would be unfair and unjust. Small and but partly developed as this service is, we owe much to it for the hard, conscientious work which already has been done by its officers. To place them on the same salary footing as the medical officers of the army and navy would seem to be the least that ought to be done at the present time; and it should be done at once.

WHOLESALE PROPHYLAXIS.

To combat the caterpillar plague, which was having a disastrous effect on the forests of Saxony, search lights were thrown on the wooded mountain sides half a mile distant. The light attracted the caterpillar moths within the range of exhaust fans, which on one night captured three tons of these lepidopters.[1] It may seem visionary to suggest some such wholesale method of eliminating the cause of epidemics among human beings. While the removal of typhoid germs, for instance, from large bodies of water may be beyond man's inventive skill, yet that it is well within his power to prevent the initial pollution of the water is evidenced by modern scientific methods of sewage disposal. While malaria, too, is still a disease to be reckoned with, yet in certain districts the destruction of *Anopheles* by putting petroleum on stagnant water has practically abolished the *Plasmodium malariæ*. The description of Saxony's method of dealing with the caterpillar plague reads somewhat Münchausenesque, yet to the people of a third of a century ago some of the methods of modern medical science in disease prophylaxis would have seemed no less far-fetched and sensational.

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[1] Quoted from the Scientific American, Aug. 29, 1908, p. 138.

Medical News

CALIFORNIA.

Physician Sent to Penitentiary.—In the case of Dr. Ralph A. Huntington, Fruitvale, said to have been convicted of manslaughter in 1900 for death following the performance of a criminal operation, and who was granted a new trial, the Appellate Court on August 13 decided that he must serve a term of imprisonment of four years in the state penitentiary, at San Quentin.

New Societies.—An antituberculosis society has been formed in Oakland with Drs. Albert H. Pratt, J. Radford Fearn, Arthur L. Cunningham, Dudley B. Channell, and Nelson H. Chamberlain on the board of directors.——Physicians of southern California met at Venice, August 8, and organized the Municipal Health Association of Southern California. Dr. W. H. Parker, Ocean Park, was elected president; and Dr. William S. Smith, Santa Monica, secretary; and Dr. Lyman H. Case, Santa Monica, committee on public health.

Hospital Notes.—Work has commenced on the addition to the Red Cross Hospital San Mateo, donated by Mrs. Whitelaw Reid.——The plans for the new Marine View Hospital, Eureka, to be erected by Drs. Charles C. and Curtis O. Falk, are completed and construction will be commenced at once. The hospital, when completed, will represent an outlay of $35,000.——A corporation has been capitalized at Palo Alto to erect a large private hospital to contain from 20 to 25 patients, at a cost of $40,000.——Property has been secured in Bakersfield for the new hospital to be conducted by the Sisters of Mercy. The buildings at present on the property will be remodeled at a cost of $2,500 for temporary use, pending the erection of a new building.——The University of California has been donated $100,000, the balance of the San Francisco relief fund contributed by Massachusetts for the establishment of a free ward in the University of California Hospital to be known as the Massachusetts Ward.

DISTRICT OF COLUMBIA.

Fire in Hospital.—A slight fire occurred at St. Elizabeth's, the government hospital for the insane, August 11, which was extinguished by prompt action of the fire brigade before the arrival of the fire department of the city.

Personal.—Isaac Phelps, for many years instructor at Yale, has been appointed instructor in physiology in the Medical Department of George Washington University.——Dr. Murray G. Motter, deputy health officer and chief inspector of the district, has resigned to accept a position in the Public Health and Marine-Hospital Service. Dr. Henry F. Sawtelle has succeeded Dr. Motter.

Health Report.—According to the report of health and mortality for the week ended August 22, there were 76 deaths, 42 of the decedents being white and 34 colored. There were 133 births registered, of which 99 were white. Typhoid fever showed a slight increase as compared with the preceding week, as 44 new cases were reported, bringing the total number of cases on hand to 182, with 3 deaths.

ILLINOIS.

Chicago.

Gift to Library.—Drs. Emanuel J. and William N. Senn have presented to the John Crerar Library more than 2,000 volumes from the library of the late Dr. Nicholas Senn, to be added to the Senn collection.

Personal.—Dr. and Mrs. Philip S. Doane expect to sail from Europe October 17.——It is announced that Dr. Antonio Lagorio, who was recently infected with rabies, is out of danger.——Dr. George E. Fosberg and family have returned from Europe.

In Many Languages.—The health department on August 31 begun issuing its bulletin on "Hot-Weather Care of Infants" in Lithuanian. The bulletin had previously been published in English, Polish, Bohemian, German, Italian, Swedish and Yiddish.

Henrotin Bath Dedicated.—The first public bath to be located in the Twenty-fourth ward, and named in honor of the late Dr. Fernand Henrotin, was formally dedicated September 1. The bath house has 20 shower baths and is located at Ashland and Fullerton avenues.

School Inspection.—Beginning September 8, each school medical director will make a daily visit to each school assigned him. At the first visit the inspector will make a rapid inspection of all pupils to determine if any seeking admission bear evidence of contagious disease. More detailed inspections will be made later.

August Mortality.—There were 348 more deaths in August than in July, and 132 fewer deaths in August than in the corresponding month of last year. The deaths from all causes were 2,690, of which acute intestinal diseases caused 815; consumption, 288; heart disease, 198; violence (including suicide), 194; nephritis, 157; cancer, 124; and pneumonia, 120.

Contagious Diseases.—To the total of 324 cases of contagious diseases reported during the week ended September 5 diphtheria contributed 61; scarlet fever, 69; measles, 11; whooping cough, 12; typhoid fever, 126; and tuberculosis, 31. All diseases were fewer in number excepting scarlet fever and typhoid fever, the former increasing 32 and the latter 79.

Weekly Deaths.—The mortality during the week ended September 5 was 553, or 31 less than for the preceding week, and 21 less than for the corresponding week of 1907. There was a reduction of 38 from diarrheal diseases; 19 from consumption, and 4 from typhoid fever. The deaths from diphtheria increased 3; from pneumonia, 10; and from whooping cough, 3, as compared with the preceding week. Acute intestinal diseases caused 138 deaths; tuberculosis, 46; violence (including suicide), 42; nephritis, 39; heart disease, 38; pneumonia, 35; and cancer, 32.

KENTUCKY.

Society Meetings.—The Knott County Medical Association was organized at Hindman, June 26. The following officers were elected: President, Dr. John W. Duke, Hindman; vice-president, Dr. Owen Pigman, Mallie; secretary, Dr. Montford F. Kelly, Hindman; and treasurer, Dr. Richard W. Duke, Hindman.——The Owensboro Medical Society at its annual meeting elected the following officers: President, Dr. Charles H. Todd; vice-president, Dr. Otway W. Rash; secretary, Dr. George L. Barr; and member of board, Dr. John J. Rodman.

Personal.—Dr. Joel Ross, Fort Thomas, has returned after seven years spent as medical missionary in Corea.——The home of Dr. J. P. Brashear, Middleboro, was destroyed by fire August 19, he and his family barely escaping with their lives.——Dr. William L. Nuttall, Newcastle, has been appointed superintendent of the Kentucky Institute for Feeble-Minded Children, Frankfort.——Dr. Frank H. Clarke, Lexington, has returned from Europe.——The office of Dr. Frank P. Strickler, Elizabethtown, was damaged by fire August 20, to the extent of about $700.——Drs. Virgil F. Barker and Joseph Gower have been elected members of the Newport board of health.——Dr. James A. Averdick, Covington, is seriously ill with septicemia.——Dr. Samuel T. Botts, Glasgow, who has been seriously ill, is reported to be improving.

MARYLAND.

Typhoid Fever.—Typhoid fever is reported at Arundel-on-the-Bay, near Annapolis. Several cases are said to have been taken from there to Washington. The source of the epidemic has not yet been ascertained.

Test Case.—Dr. Benjamin R. Davidson, Davidsonville, register of wills of Anne Arundel County, was arrested September 1 for violating the new law which imposes a wheel tax on owners of vehicles using the county roads. Dr. Davidson, like many other residents of the county, holds that the law is unconstitutional, and will make this a test case.

Baltimore.

Personal.—Dr. H. J. Giering is in Paris.——Dr. William D. Booker has returned from abroad much improved in health.——Dr. James M. Carter, while suffering with despondency due to ill health, is said to have attempted suicide with a pistol, August 28.

Delay in Opening Hospital.—The Sydenham Hospital for Infectious Diseases will not be opened for six or eight weeks, owing to the necessity of having an administration building. The commission tried to avoid providing this building, hoping to be able to use some rooms in the hospital for physicians, nurses and employés, but this was found to be impracticable.

Arrest for Illegal Practice.—During the last week two arrests were made for illegal practice of medicine. One was a negro woman who prescribed herb medicine for a policeman, and was committed pending the action of the criminal court; the second case was a man calling himself "Dr." Joseph W. Reynolds, who also prescribed for a patrolman and claimed to have a certificate at his home in Cecil County.

Tuberculosis in Factories.—The governor's plans for dealing with tuberculosis in factories in the state, through inspectors who superintend the conditions in which the employés work, and are on the lookout for cases of tuberculosis, meets with very great favor, both among factory owners and the medical profession. It has been suggested that appointments of inspectors be made by the State Board of Health.

MASSACHUSETTS.

No Trace of Plague.—The port physician and health commissioner of Boston have released the Portuguese immigrants who were thought to have been exposed to bubonic plague, and quarantined at Gallup's Island, as the period of incubation has safely passed.

Personal.—Dr. Herbert L. Burrell, Boston, president of the American Medical Association, sailed September 8 to attend the International Congress of Surgery, to be held at Brussels. ——Dr. H. A. Christian has been appointed Hersey professor of theory and practice of medicine in the Harvard Medical School.——Dr. Frank B. Gallivan, chemist of the Boston milk laboratory, has resigned.

Ether Day.—The trustees of the Massachusetts General Hospital have issued invitations to attend the exercises at that institution of the sixy-second anniversary of Ether Day, October 16. Demonstrations and operations are to be made at the hospital from 11 a. m. to 1 p. m., when luncheon will be served; the exercises of Ether Day, presentation of diplomas and the annual address by Dr. William H. Welch, Baltimore, will be held at 3:30, and the dinner of the Hospital Alumni Association will occur at 8 o'clock.

Woman's Medical Society.—The Woman's State Medical Society of Massachusetts has been formed with the purposes of bringing medical women of the state into communication with each other for their mutual advantage, of extending medical knowledge, of advancing medical science, and encouraging social and harmonious relations within the profession. The requirements for active membership are that applicants must be graduates in medicine, in good professional standing, and members of the Massachusetts Medical Society. Associate members consist of women graduates in medicine from recognized medical colleges, who have the privilege of becoming active members as soon as they meet the requirement of membership in the state society.

NEW JERSEY.

Hospital Notes.—The bids for the erection of the new hospital at the almshouse at New Lisbon have been received. The lowest bid was $7,966 for the building and $1,690 for plumbing and heating.——Dr. L. F. Hatch, Vineland, has erected a hospital in that city which has cost more than $18,000 and is to be free to all emergency cases.

Personal.—Drs. Edward Whalen, James Trotter and Leo Koppel, internes in the Jersey City Hospital, are taking the Pasteur treatment.——Dr. Edward D. Bradin, Newark, who was recently stricken with cerebral hemorrhage, is reported to be improving.——Dr. James H. Curts, Paterson, who was injured in an automobile accident at Bogota, August 2, has been removed to St. Joseph's Hospital, Paterson, and is improving slowly.——Dr. Frank P. McKinstry has been elected president of the Washington board of health.

SOUTH CAROLINA.

Personal.—Dr. Robert Wilson, Charleston, has been elected dean of the Medical College of the State of South Carolina, Charleston, vice Dr. Allard Memminger, resigned; Dr. Lane Mullaly, has been elected vice-dean and registrar; and A. Johnston Buist, secretary and treasurer.——Dr. James M. Johnson, Newberry, has been made instructor in medicine in the clinical laboratory of Johns Hopkins University, Baltimore.

NEW YORK.

Personal.—Dr. Frederick E. Lettice, Schenectady, has been appointed physician to the state prison, Ossining, vice Dr. Robert T. Irwine, resigned.——Drs. John A. Stapleton and Philip Conboy, Rochester, have sailed for Europe.——Dr. Edward A. Dean has been elected health officer of Seneca, vice Dr. Edward H. Ballou, Gardenville, deceased.

Buffalo.

University to Open.—The medical department of the University of Buffalo will open for its sixty-third annual session September 28. Dr. Julius Ullman will deliver the annual address.

Hospital Notes.—Work is progressing on the new United States Marine Hospital, which is to cost $125,000.——The work of the day tuberculosis camp has been in progress for 60 days and is exceptionally gratifying, as 40 patients have taken treatment each day.——A determined effort is being made for the erection in Buffalo of a suitable municipal isolation hospital.

New York City.

Millions to Charity.—By the will of Frederick Hewitt, Owego, $2,000,000 is bequeathed to the New York Post Graduate *School and Hospital.——The Lying-in Hospital* of Manhattan has been bequeathed a portion of the residuary estate of the late William B. Leeds.

New Home for Dispensary.—Plans have been filed for a new building for the New York Dispensary on Worth Street. The new edifice is to cost $25,000 and will be built in Italian renaissance style. The building will contain a diet kitchen, drug store, dentist's office, small isolation wards, and a ward for tuberculous patients.

Bellevue Wants Larger Allowance.—The annual budget of Bellevue and Allied Hospitals asks for $1,197,861, which is an increase of $271,679 over last year. The principal reason for this increase is the completion of the new pavilions which will accommodate 396 patients, and it is expected that they will be fully occupied during the coming year.

Remodel Vanderbilt Clinic.—The Vanderbilt Clinic of the College of Physicians and Surgeons is to be remodeled at a cost of $20,000. Among improvements to be made are the obtaining of room for setting up mechanico-therapeutic apparatus for the therapeutic department and enlargement of the laboratory of *chemical pathology*. By agreement of the New York County branch of the Red Cross, the Vanderbilt Clinic announces that a day camp for tuberculosis patients will soon be opened on the roof of that building. The Red Cross will provide the funds necessary for the maintenance of the camp. The executive work will be largely in the hands of the woman's auxiliary committee of the clinic.

Personal.—Dr. Carl Beck has returned from Europe.——Dr. Eugene B. Sanborn, Borough of Richmond, deputy health officer of the port of New York for 30 years, has retired, and will live henceforth at his farm near Machias, Maine.——Dr. Smith Ely Jelliffe sustained serious bruises in an automobile accident near Liberty, N. Y., August 4.——Dr. Mary Crawford, ambulance surgeon, was attacked and beaten by an insane patient in an ambulance, August 19, and on September 6 had an encounter with a second insane individual, whom she subdued. ——Dr. Lawrence Aiken, ambulance surgeon in the Long Island Hospital, was thrown from the ambulance, in a collision with an electric car, August 27, breaking his right arm.

What the Health Department Costs.—The annual budget of the board of health calls for large increases in appropriations. The hospitals under the jurisdiction of the department especially urge large appropriations; Willard Parker Hospital, which has been *receiving* $215,012, wants $282,940; the Riverside Hospital wants $269,105 instead of $209,068; the Kingston Avenue Hospital in Brooklyn, where scarlet fever is treated, has asked for $302,110, which is an increase of $120,000. The United States government sends immigrants suffering from contagious diseases to this institution and pays $75,000 annually for the privilege. There is a demand for an increase in school and district inspectors. Manhattan has at present 226 inspectors and needs 295; also 93 nurses instead of 45 as at present. The department asks for $2,269,722 for salaries. The total asked for is $3,416,519 for the year 1909.

WASHINGTON.

Epidemic Diseases.—The Tatoosh epidemic of diphtheria is now under control. Only one death has resulted so far.——Six cases of diphtheria and one case of scarlet fever were reported from the Catholic Orphanage, Seattle, August 20.

To Avert Oriental Diseases.—Dr. Spiro Sargentitch, health officer of Tacoma, has sent an invitation to the health officers of the Puget Sound and Pacific cities to hold a meeting in Tacoma to consider means to prevent the spread of bubonic plague and other oriental diseases.

Personal.—Dr. Mary McMillan has resigned as house physician at the Deaconess' Hospital, Spokane, and has been succeeded by Dr. Baudy, Wilbur.——Dr. M. M. Hull has returned after a year in Europe and opened an office at Green Lake.——Dr. Albert L. McClanahan, Seattle, is said to have been fined $20 August 6, for alleged failure to report a case of diphtheria to the municipal health officer.

Health Report.—The health report of Seattle for July shows that there were 341 births and 146 deaths registered during the month. Among the chief causes of death were: Diseases of the circulatory system, 21; accidents, 17; diseases of the digestive system and tuberculosis, each 14; diseases of early infancy, 13; diseases of the nervous and genitourinary systems, each 12; suicide, 10; cancer, 6; diphtheria, pneumonia and puerperal diseases, each 3; and typhoid fever, 2. The following contagious diseases were reported during the month: Diphtheria, 39; scarlet fever, 32; typhoid fever, 25; smallpox, 16; and measles, 7.

GENERAL.

Personal.—Drs. William A. White, Washington, D. C., and Smith Ely Jelliffe, New York City, have been appointed delegates to represent the United States at the Third International Conference for the Care of the Insane, to be held in Vienna, October 7 to 11.

Health in Cuba.—The sanitary department in Cuba will maintain rigid quarantine against Mexican ports until yellow fever is officially declared extinct. All persons arriving in Havana from these ports are detained in camp to complete the incubation period, and passengers in transit are forbidden shore liberty.——At Daiquiri only one case of yellow fever and that of mild type, was reported during the week ended August 15.

Yellow Fever in Cuba.—Dr. Carlos J. Finlay, chief sanitary officer of Cuba, in circular No. 50, issued July 27, details the cases of yellow fever which have occurred since April 1, the beginning of the present epidemic year. In all 15 cases were reported, 2 of which were in Santiago and 13 in Daiquiri. Of these patients 3 died and 12 recovered. He gives out the last occurrence of yellow fever by provinces as follows: In Pinar del Rio, 1900; Havana City, Jan. 31, 1908; Havana province, Jan. 10, 1908; Matanzas province, Dec. 24, 1907; Santa Clara province, Feb. 18, 1908; Camaguey province, Nov. 12, 1907; and Oriente province, July 9, 1908.

Health of the Canal Zone.—The report of Col. William C. Gorgas, U. S. A., chief sanitary officer Canal Zone, for June, shows a reduction in the death rate for white employés for the month as compared with the rate of 1907 of 1.21 per cent.; among colored employés for the same period, a reduction of 20.50 per cent., equivalent to a reduction in the death rate of all employés of 15.18 per cent. Out of the total of 47 deaths during the month 21 were due to accidental violence; 5 were due to malaria, as compared with 8 in the corresponding period of last year; 2 to typhoid fever, as compared with 8 in June, 1907, and 5 from pneumonia, as compared with 30 during the corresponding period of last year, showing a definite improvement along all lines. Of the 4 deaths which occurred among whites from the United States, 3 were from external violence and one from organic heart disease. The first 2 deaths on the Isthmus from hydrophobia occurred in June. There was no quarantinable disease of any kind during the month.

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.

As we have previously noted, the work of the Congress is divided into two parts: the tuberculosis exhibit and the section work. Both the exhibition and the Congress will be held in the new National Museum at Tenth and B Streets, Washington, D. C. The exhibit continues during the entire three weeks, but the section work is limited to the second week, September 28 to October 3. The work of this week will be inaugurated in a general meeting to be held September 28 at 11 a. m., at which it is expected that Secretary Cortelyou will preside. At this meeting there will be no speaking except by the representatives of governments, twenty-four independent governments being represented. The work of the congress is carried on in seven sections. Each section will hold two sessions daily, excepting on the days when the general meetings are held. The opening session of the sections occurs Monday, Sept. 28, at 2:30 p. m. The general meetings will be held in Assembly Hall of the New National Museum. The section meetings will be held in rooms on the second floor of the same building. The first floor will be occupied by the Tuberculosis Exhibition. The program of the Orthopedic Section was published in The Journal, August 22.

Section Officers.

The following are the presiding officers of the various sections:

Section 1: Pathology and Bacteriology.—President, Dr. William H. Welch, Baltimore; secretaries, Dr. Harold C. Ernst, Boston, and Dr. William Royal Stokes, Baltimore.

Section 2: *Clinical Study and Therapy of Tuberculosis.*—President, Dr. Vincent Y. Bowditch, Boston; secretaries, Dr. Edwin A. Locke, Boston; Dr. W. Jarvis Barlow, Los Angeles, and Dr. Guinard, Bligny, France.

Section 3: Surgery and Orthopedics.—President, Dr. Charles H. Mayo, Rochester, Minn.; secretaries, Dr. William D. Haggard, Nashville, Tenn., and Dr. John T. Bottomley, Boston.

Section 4: Tuberculosis in Children.—President, Dr. Abraham Jacobi, New York; secretaries, Dr. David Bavaird, Jr., New York, and Dr. F. S. Churchill, Chicago.

Section 5: Hygienic, Social and Economic Aspects.—President, Mr. Edward T. Devine, New York; secretaries, Mr. Alexander M. Wilson, Chicago, and Miss Lilian Brandt, New York.

Section 6: State and Municipal Control.—President, Surgeon-General Walter Wyman, Washington, D. C.; secretary, Dr. J. W. Kerr, Washington.

Section 7: Animal Tuberculosis.—President, Dr. Leonard Pearson, Philadelphia; secretary, Dr. John R. Mohler, Washington, D. C.

Public Lectures and Meetings.

On Friday afternoon, September 25, at 2:30, President Roosevelt will receive the delegates in the East Room, at the White House. On the evening of Monday, September 28, from 8:30 to 11 o'clock, there will be a reception in the Corcoran Art Gallery. During the two weeks, September 28 to October 9, there will be public lectures as noted in The Journal, August 29, 1908, p. 769.

Abstracts of Papers.

Abstracts of the papers to be read will be prepared for distribution on the day on which they are to be read and the full text of the papers, together with special lectures, the discussions, and an account of the chief features of the exhibition will be published in the Transactions of the Congress, which will comprise four volumes of moderate size and will be furnished free to members of the Congress.

Additional Papers to Be Read in Section 1.

A partial list of the papers in this Section was published in The Journal, Aug. 29, 1908, p. 769. The following are to be added:

The Ophthalmic Reaction. Dr. Fernand Arloing, Lyons, France.

Concerning Latent Tuberculosis. Prof. Francis Harbitz, Christiania, Norway.

The Predispositon of the Lung Apices and the Rules for Locating the First Disease Centers. Dr. Carl Hart, Berlin, Germany.

The Opsonic Index in Certain Tuberculous Infections. Dr. T. W. Hastings, New York.

The Opsonic Index in Early Diagnosis. Dr. George P. Sanborn, Boston.

Studies of the Opsonic Index. Drs. H. M. Kinghorn and D. C. Twichell, Saranac Lake, New York.

The Cutaneous Tuberculin Reaction. Dr. Clemens von Pirquet, Vienna, Austria.

Cutaneous and Conjunctival Reaction. Dr. A. Wolff-Eisner, Berlin.

Cutaneous and Conjunctival Reaction. Dr. Arnold C. Klebs, Chicago.

The Present Status of Serum Diagnosis. Dr. Paul Courmont, Lyons, France.

Flies as Agents in the Dissemination of Koch's Bacillus. Dr. C. André, Lyons, France.

The Possibilities of Infection from Table Utensils at Sanatoria. Dr. J. Woods Price, Saranac Lake, N. Y.

The Relations of Human and Animal Tuberculosis, with Special Reference to the Question of the Transformation of Human and Other Types of Tubercle Bacillus. Prof. Theobald Smith, Boston.

Human and Bovine Tuberculosis and the Tubercle Bacillus. Prof. J. Fibiger and Prof. C. O. Jensen, Copenhagen, Denmark.

The Susceptibility of Cattle to the Virus of Surgical Forms of Human Tuberculosis. Dr. R. M. Dinwiddie, Experiment Station, Arkansas.

Tuberculous Cervical Adenitis. A Study of the Tubercle Bacilli Cultivated from Fifteen Consecutive Cases. Dr. P. A. Lewis, Boston.

The Problem of Immunity in Tuberculosis. Dr. Edward R. Baldwin, Saranac Lake, New York.

Immunization Against Tuberculosis. Prof. A. Calmette and Dr. C. Guerin, Lille, France.

Immunity Production by Inoculation of Increasing Numbers of Bacteria Beginning with One Living Organism. Drs. Gerald B. Webb and W. W. Williams, Colorado Springs, and Prof. M. A. Barber, University of Kansas.

Considerations Concerning Lesions of Tuberculosis. Prof. William T. Councilman, Boston.

The Pathology of Hemorrhage in Incipient Tuberculosis. Prof. J. Paviot, Lyons, France

The Distribution of Tuberculous Lesions in Infants and Young Children A Study Based on Postmortem Examinations. (To be read in Section IV) Dr Martha Wollstein, New York.

The Frequency of Tuberculosis in Childhood (To be read in Section IV). Dr C. von Pirquet, Vienna, Austria

Papers, titles not given will be read by Drs B Stiller, Budapest, Hungary; Simon T. von Unterberger, St Petersburg Russia; Johann von Szaboky, Budapest, Gleichenberg; N. Jancso and A Elfer, Klausenburg, Hungary: Ladislaus Detre, Budapest, Hungary, Isidora Spitzstein, Budapest, and J Hericourt, Paris; S Matejin, Budapest; S. Arloing, Lyon, France; M. P. Ravenel, Madison, Wis.; Lydia Rabinowitsch Kempner, Berlin; A Calmette, Lille, France, Fernand Bezancon and S I de Jong, Paris, and Prof. G Nicolas, Lyons; Josef Kertesz, Budapest, R. Lepine, Lyons; E Boinet, Marseilles, France

FOREIGN.

Personal.—Dr. Emil Kraepelin, professor of psychiatry in Munich, who has been visiting the Yellowstone Park and the Yosemite, has sailed for Europe——Dr William Osler, Oxford University, has been made lord rector of Edinburgh University.

Progress on the Mecca Railroad.—The Hedjaz Railroad is finished to Medina, where the first train arrived August 22. It is feared that the completion of this road will throw wide the gates for the invasion of Europe by oriental epidemics International prophylaxis is being remodeled to cope with this new aspect of the Mecca pilgrimages.

Four-Hundred-Year-Old Drug Store in Copenhagen.—The apothecary shop "at the Sign of the Swan" is approaching the four hundredth anniversary of its foundation Two other drug stores in Copenhagen have recently commemorated their two hundredth and two hundred and fiftieth anniversaries by the publication, by each, of an illustrated souvenir pamphlet They review the history of pharmacy in Denmark, with many sidelights on the history of medicine and of the medical profession.

Death of Becquerel.—Henry Becquerel was professor of physics and applied physics at Paris, and has made notable contributions to science besides his discovery of the rays from uranium salts which have made his name famous He held honorary degrees from four British and one German university, and was a member of the scientific academies of Rome, Berlin and Washington Besides the Rumford, Barnard and Helmholtz medals, he shared the Nobel prize for physics in 1903 with the Curies. At his death, August 25, he was 57 years old

Investigation of Alleged "Miracle Cures."—The pilgrimages to Lourdes are attracting more and more persons from Germany every year, and the Germans look with much disfavor on this "wasting of Teutonic savings on French soil" A Munich society, the *Monistenbund*, has appealed to physicians to investigate the after history of cases in which miraculous cures are alleged to have been realized. The appeal is signed by two Munich physicians, one of whom is treating for severe lupus a woman whose "miraculous cure" of the lupus is chronicled in Boissarie's book as one of the great miracles at Lourdes.

LONDON LETTER.

(*From Our Regular Correspondent.*)

London, Aug. 29, 1908.

Record Decrease in the Death Rate.

The quarter ending June last showed the lowest death rate recorded in any second quarter since civil registration was established. The deaths registered in England and Wales were at the rate of 13.8 per 1,000 of the population, which is 1.8 per 1,000 below the mean rate for the corresponding quarters of the last ten years The lowest rates were in the counties of Middlesex (10.8), Essex (11), and Kent (11.2). The three Welsh counties, Glamorganshire, Denbighshire and Carmarthenshire, showed the highest rates, which were 15.7, 15.7 and 18.9 respectively. In the 76 cities with populations exceeding 50 000 there was a marked decrease in the mortality. The rate was 13.7, as against 14.7, 14.8 and 14.9 in the three preceding corresponding quarters. The same holds true of the 142 smaller towns, with populations ranging between 20,000 and 50,000 The rate was 12.9, as against 13.6, 13.4 and 14 in the three preceding corresponding quarters The birth rate for the quarter shows a decrease of 1 per 1,000 as compared with the average for the preceding ten years.

The Danger from Illness of Locomotive Engineers.

In the London Letter of May 30 there was recorded the death of an engineer on the footplate of an express train a few minutes after leaving Newcastle. This occurrence drew attention to the necessity of medical supervision of men engaged in this work. Another warning of a still more striking character has now been given. The escape from great loss of life was most remarkable. A market train, crowded with passengers, was about a mile from Nottingham when the driver, who had only just resumed work after a period of sick leave, was suddenly seized with paralysis and fell on the footplate. For a few minutes the fireman was so concerned for the engineer's safety that the engine was left uncontrolled, traveling at an increasing speed. At Radford the train was signaled to stop, but it dashed through the station at a high speed, alarming the officials and the passengers. The signals had been set against the train, so that an express train to London might pass. As the driver failed to stop the signalman, realizing that disaster was imminent, promptly switched the runaway train on to a branch line. He was only just in time. The train had barely cleared the main line when the express dashed past. By this time the fireman had taken command of the engine and brought the train to a standstill. The driver was found lying helpless and speechless on the footplate. In this connection the Shrewsbury disaster, which occurred in the early hours of Oct. 15, 1907, may be recalled. A train ran with a high rate of speed on a curve near Shrewsbury and consequently left the rails. Eighteen persons were killed and many others were seriously injured. An exhaustive government inquiry failed to show why the engineer (who was killed) did not, as usual, reduce speed on approaching the curve. In cross-examination the locomotive foreman admitted that he had to certify that the engineer was in good health and that the latter had not been medically examined since admission to the service, about forty years ago. The most reasonable hypothesis is that the man was taken suddenly ill. Another danger—that of defective eyesight—in locomotive engineers has recently been called attention to by Mr A. R. Galloway, surgeon to the Aberdeen Eye Institution. He reported two cases which had come under his observation in the last few months. A locomotive engineer came to the Eye Institution who, three years before, had passed the engineer's examination which was conducted by a lay inspector and thereafter by the superintendent. The engineer had noticed that his sight was defective for ten years and it had been getting worse Examination showed compound myopic astigmatism. In the other case there was hypermetropia of two diopters.

Diphtheria Mortality and Antitoxin.

The annual report of the metropolitan asylums board for 1907, which has just been published, supplies further testimony of the value of antitoxin in diphtheria. In the quinquennial period, 1887-91, the death rate in the cases admitted to the board's hospitals was 33.6 per cent., and in 1893, the year before the introduction of antitoxin, 30.1 per cent. During 1907 it was 9.6 per cent., and during the quinquennium 1902-06, 9.3 per cent. The significance of these figures is accentuated by those of the Brook Hospital, at which a record has been kept of the mortality according to the day of the disease on which the antitoxin was given. During the years 1897-1907, 6,556 cases were treated. Of these 250 patients received an injection of antitoxin on the first day of the disease without a single death; 1,513 received the injection on the second day, with a mortality of 4.3 per cent.; 1,690 received the antitoxin on the third day, with a mortality of 11.2 per cent; 1,338 were injected on the fourth day, with a mortality of 16.9 per cent., while 1,765 received antitoxin on the fifth day, with a mortality of 18.6 per cent.

Legal Questions Under the Workmen's Compensation Acts.

The workmen's compensation act is constantly giving rise to difficult legal questions. Recently the liability of an employer for death due to granular kidney in a man who had previously suffered from lead poisoning was contested. The act provides that "lead poisoning or its sequelæ" is a form of industrial disease for the results of which compensation is to be allowed. In the lower court the county court judge found: 1, That the immediate cause of death was granular kidney; 2, that granular kidney is a sequela of lead poisoning, but is also a sequela of gout, alcoholism, heart disease and other complaints; and, 3, that lead poisoning was not proved to be the cause of granular kidney in the deceased, but that the employers had not proved that it was not. On these findings he gave a verdict for the widow of $1,300. This judgment was reversed by the court of appeal on the ground that the onus of proof lies on the workman and not on the employer. The court held that sequela in the act meant a consequence proved to be caused by the disease in question and not one which may have ensued from other causes

PARIS LETTER.

(From Our Regular Correspondent.)

Paris, France, Aug. 20, 1908.

Death of Professor Liégeois.

Professor Liégeois, of the law department of the University of Nancy, who has just died as the result of an automobile accident, was not a physician, but his name and his works have played a great rôle in the history of hypnotism. He was the first lawyer to study the application of hypnotism to criminal law. In a memoir published in 1884, discussing hypnotic suggestion in relation to civil and criminal law, he gave some interesting examples of criminal suggestion and drew the conclusion that every one in the somnambulistic state becomes, in the hands of the experimenter, mentally and physically, a mere automaton. "Ideas spontaneously developed or acquired through education, feeling or tendencies, sympathies or repugnances, love or hatred, prejudices or passions—all these may be in an instant modified, transformed or overthrown." M. Liégeois drew from the doctrine of the complete automatism of the hypnotized subject the conclusion that a person compelled by hypnotism to commit crime was irresponsible and should be acquitted of crime; only the person who supplied the criminal suggestion was guilty; he alone ought to be prosecuted and punished. The hypnotic subject, he declared, was a mere instrument in the hands of the hypnotizer, "like the cup which contained the poison." This was one of the chief points of difference between the views of the Nancy and Salpêtrière schools. Charcot and his pupils regarded hypnotism as an actual malady, a neurosis, the appanage exclusively of hysterical subjects; they believed in the persistence in the hypnotized subject of a certain degree of personality which opposed itself to criminal suggestions. The Nancy school, on the contrary, affirmed that the hypnotic slumber might be produced in normal subjects as well: that it was the result of suggestion alone, and that suggestion rendered the subject absolutely passive in the hands of the hypnotizer, so that it was perfectly possible to make the subject commit somnambulistic crimes.

M. Liégeois' memoir and his work entitled "Relations of Suggestion and Somnambulism to Jurisprudence and Legal Medicine," 1889, made him widely known. When, in 1890, the celebrated Gouffé case was being tried the counsel for Gabrielle Bompard summoned M. Liégeois as witness for the defense. A remarkable discussion took place during this trial between M. Liégeois, who defended the doctrines of the Nancy school, and Drs. Brouardel, Motet and G. Ballet, who upheld the theory of the Salpêtrière school. Professor Liégeois' ideas, expressed at great length, had considerable influence on the verdict, for the jurors gave Gabrielle Bompard the benefit of extenuating circumstances.

Discussion on Hysteria Before the Neurological Society.

As in 1890, suggestion and hypnotism are just now exciting vivid interest, but from another point of view. There is, in fact, a complete change of base taking place in respect to the conception of hysteria. This is why the discussion on hysteria which has occupied two long sessions of the Neurological Society at Paris, and which will be resumed after the summer vacation, has attracted so much attention. Dr. Dupré was commissioned by the society in 1901 to prepare a report on the present status of the question of hysteria. The fact that so many years have elapsed between the selection of the subject and the presentation of the report is due to the fact that there are few subjects so vast, so complex and so articulated with the whole subject of neurology and psychiatry. Dr. Babinski initiated this campaign against the traditional conception of hysteria. He restricts the term "hysteria" exclusively to a group of manifestations characterized by the fact that they can be exactly reproduced by suggestion in certain subjects and which can be caused to disappear only by means of persuasion. These manifestations, to which he has given the epithet "pithiatic," ("curable by persuasion") are to be sharply distinguished from the phenomena that can not be modified by suggestion, such as the reflexes, circulatory and vasomotor disturbances, and the so-called hysteric fever. This novel conception of hysteria has aroused so many contradictory opinions lately that, as Dr. Dupré says, every logical and inquiring mind feels the need of defining exactly what is meant by the term "hysteria," all the more that the term is constantly employed in the discussion of the many difficult medicolegal questions which arise in the application of the law of industrial accidents. The questions propounded were detailed, with discussion, in The Journal, May 23, page 1714, and were mentioned August 8, page 537.

Babinski emphasized how necessary it is to guard against error in investigating sensory disturbances or contraction of the visual field. In the past, when he was investigating hemianesthesia according to the usual methods, he encountered cases of hemianesthesia very frequently. Gradually, as he perfected his method of examination, guarding more and more against suggestion, the number of cases of this nature diminished. In the last few years, out of one hundred subjects, each presenting at least one pithiatic disturbance, not a single instance of sensitivo-sensory hemianesthesia was encountered.

The point is that one must refrain from asking the patient such questions as: "Have you a good sense of touch?" or "Have you as good sense of touch on one side as the other?" This kind of interrogation arouses the idea of anesthesia in the patient. Babinski makes the patient close his eyes; then he begins by asking the patient to put the tip of his finger, left or right, on the spot where he has been touched. Then the physician touches various parts of the body; then he pinches the skin, or pricks it, asking each time: "What do you feel now?" or "What am I doing to you?" He proceeds with similar precautions in regard to the contraction of the visual field. Professor Brissaud asserts that he has never seen contraction of the visual field since he has taken precautions against errors. In place of beginning by asking the patient if he sees the object placed directly before him, the two thumbs are placed behind the head and brought gradually into the median line. Brissaud saw an industrial accident case in which no hemianesthesia was observed at first, but, after an inexpert medical examination, a hemianesthesia was found. The medical origin of this hemianesthesia was beyond question.

This discussion will bring a little order into a very confused subject. According to the true and witty saying of Lasègue, "Hysteria is a basket into which we throw the papers that we do not know how to classify." Does not the progress of science consist in perfecting our methods of classification so that there are fewer and fewer papers that one does not know how to classify?

BERLIN LETTER.

(From Our Regular Correspondent.)

Berlin, Aug. 13, 1908.

To Reduce Infant Mortality.

The Prussian government has recently called attention anew to the fact that, by appropriate instruction of the public, intelligent care of infants can be materially promoted, and in this way the infant mortality would necessarily be reduced. In this respect the distribution of circulars (the so-called *Merkblätter*) by the registrar's office (that is, the "Bureau of Public Statistics," to which divorces, births, etc., are reported) has been of great service. The public vaccinators are instructed to take the occasion of vaccination of infants to instruct the public in an appropriate way. The midwives also are expected to assist in this direction. With reference to the most advisable methods of public care for the feeding of infants in the less well-to-do classes of the large cities, the *Wissenschaftliche Deputation für das Medizinalwesen*, the highest official medical authority in Prussia, has published the following: 1. The best method of public care for the nutrition of infants among the less well-to-do classes of the population consists in favoring and assisting to the greatest extent possible the natural nourishment from the breast of the mother. Efforts directed to this end are to be duly carried out on the part of the community. 2. The best method for securing an unobjectionable animal milk for infants of the lower classes consists in the control and, under proper conditions, the assumption of the work of supplying milk by a communal milk bureau. For this purpose it is recommended that corresponding police regulations be enacted for the various governmental districts and provinces. 3. The most advisable method for securing an appropriate nourishment for individual infants consists in the establishment of communal milk depots. In these the single meals for the infant are to be provided, ready for use, in various mixtures; with them institutes for information and for the care of infants should be organically connected in which, on the one hand, individual medical instruction should be furnished and, on the other hand, the nourishment of the infant at home should be supervised by well-instructed, permanently employed municipal nurses. 4. All measures for the communal care of infants should be conducted by a communal central office which should be under the direction of a physician.

Preventive Medicine in the Army.

The medical division of the Prussian War Department has held a consultation to determine which curative and protective sera can be especially recommended for the purposes of the army, from a scientific and practical standpoint, with reference to their mode of action, certainty of dose and keeping qualities, and has reached the following conclusions: Diphtheria and tetanus serum and also meningococcus serum are to be recommended, as no injurious by-effects have been observed. The greatest attention should be given to dysentery serum in epidemics. The other sera at the present time are not yet to be recommended. Their application must be entrusted to the judgment and the responsibility of the individual sanitary officers. The individual field sanitary divisions should always carry tetanus and diphtheria serum; the latter, however, in small quantity, as there is little reason to expect a diphtheria epidemic. No obligation to carry the other sera is imposed. The method of typhoid prophylaxis of Pfeiffer and Kolle is to have further trial, but at present it would be practical to use it only to a slight extent and first on those who have the care of the sick.

Jews as Army Surgeons.

According to a communication in the political press, which has not been contradicted, the emperor has recently issued an order according to which in the choice of officers no attention shall be given to the religion (*Konfession*) of the applicant. As heretofore, no distinction was made between the different Christian denominations, this order can affect only the Jews. As is well known, there has been for some decades no Jewish officer in active service in the German army, and in Prussia there is no Jewish officer of the reserve, that is, troops for service only in case of war, while in this respect the South German states have not carried the process of exclusion so far.

The exclusion of the Jews from the position of officer is extended not only to the officers proper, but (what especially interests us here) also to the army physicians (*Sanitatsoffiziere*). In Prussia, so far as I know, there are still only two Jewish active sanitary officers, appointed in former years, while for many years the Jews have not been admitted any longer to the active sanitary corps. They are still admitted to the reserve, and, as a matter of fact, there are at present a large number of Jewish sanitary officers of the reserve. We have here the extremely singular fact that the Jews are not considered capable of exercising the functions of physicians in the active army during peace, while in case of war, when increased trustworthiness as to capability and character is demanded of every one, this privilege is accorded them. From this contradiction it may well be claimed that the exclusion of the Jews from the active medical force of the army does not possess any essential justification, and that herein principles are at work similar to those involved in the exclusion of the Jews from the higher judicial positions and state offices —principles which need no further discussion here.

No discrimination is made against them when it is a question of soliciting contributions from them. On every such occasion when the private readiness for sacrifice is in question, the Jews are always to a recognized degree at the front, in contrast to the landed proprietors for whom the biblical sentiment: "It is more blessed to give than to receive," does not seem to exist. It is even a well-known fact that Jewish money has been drawn on for the building of evangelical churches. The reward for such sacrifices has heretofore consisted only in the conferring of orders and titles on the givers; in the civil position of our Jewish fellow-citizens no changes have been made. For the active sanitary corps, improvement in this direction would have the additional favorable result that the lack of military physicians, of which complaint has been repeatedly made, would be remedied; certainly not merely to the advantage of the medical department, but also to that of the rest of the army as well.

Personal News.

The successor of Professor Quincke in Kiel, whose resignation I have lately recorded, is Professor Lüthje of Frankfurt a. Main. Lüthje is only about 35 years old, and, as Professor Quincke resigned on account of age, it may be said that here "extremes meet." It is now a general principle to call as young physicians as possible to the teaching positions. Lüthje's main work has been in the field of metabolism that is now so zealously studied in the medical clinics. He was chosen as the successor of von Noorden at Frankfurt, about a year ago, for this reason, as the latter's special field had also been metabolic diseases. von Noorden went from Frankfurt to Vienna as the successor of the deceased Nothnagel. It was a difficult matter for the Viennese to fill the vacancy, which may seem very strange, as it should be considered a great honor to succeed so important a clinician as Nothnagel. But clinical relations in Vienna are quite in a muddle, nearly as bad as politics, so that none of the clinicians called from Germany was willing to accept the invitation from Vienna. Noorden accepted the call, so rumor goes, because his position at Frankfurt was not very secure. Noorden is a man with practical views who regards the old saying: "Galenus dat opes" (Galen gives wealth), as correct and acts accordingly. The patients in Frankfurt and those who came under his care from other parts have often suffered not less from von Noorden's charges than from their disease, and many a complaint regarding the clinician has escaped from patients and from the Frankfurt physicians. Noorden still sticks to his principle—as is reported—even in Vienna. If we regard health as a priceless treasure, we must acknowledge that Noorden is right. However, even in the business employment of the physician's calling, the sentiment is valid: "Est modus in rebus, sunt certi denique fines." (There is moderation in business; at any rate there are certain limits.)

Frankfurt has recently lost another scientist in the death of Prof. E. Albrecht, a young pathologic anatomist who has produced a whole series of remarkable investigations and justified the greatest hopes by his productive power and his genius. He was a man who would have adorned the highest professional chair.

VIENNA LETTER.

(*From Our Regular Correspondent.*)

Vienna, Austria, Aug. 25, 1908.

Vaccination in Austria.

Partly because of the constant efforts of the medical profession, and partly because of repeated outbreaks of epidemics in various large towns, the subject of vaccination has lately received much attention from the government. In consequence of the outbreak in Vienna in the summer of 1907 more than a million persons voluntarily underwent vaccination. Vaccination is not compulsory in this country, but most civil and all military offices, positions in county establishments, schools, prisons, hospitals, as well as many private positions, are open only to those who have been vaccinated. All recruits to the army, about 200,000 a year, are vaccinated on taking the oath. In Austria proper 90 per cent. of the population has been vaccinated once, and 30 per cent. twice. In the eastern and southern parts the figures are lower—10 to 20 per cent. as a rule. There is a marked correspondence between the extent of public education and of vaccination; where total illiteracy prevails the people are averse to vaccination.

Human lymph is no longer used for vaccination here. There are seven public and three private institutions for producing cow's lymph. The largest one is that in Vienna, which is owned by the state. It produces 3,000 grams of cow's lymph a year, which is made up with glycerin into 78,000 grams of vaccination lymph, equaling 700,000 tubes, each tube sufficient for two persons. As a rule, the cow's lymph is diluted with five parts of glycerin; then kept for two weeks in a refrigerator; then once more diluted, and kept on ice for four months. The lymph prepared in this way has a mild but sufficiently protective action. During the epidemic of last year, when more than 70,000 persons applied daily for lymph, the material dispensed had to be taken from fresh stock. Strong reactions, marked by rigor and pyrexia for eight to seventeen days, were observed.

The public institutions control the products of the private laboratories, and each of the latter supplies certain districts of the empire. There is, in each town or rural district, a public vaccinator, usually the *Gemeindearzt*, or poor-law medical officer, whose duty it is to vaccinate all applicants, but people of the better classes prefer to be vaccinated by their own physicians. Smallpox is usually very rare in this country, on account of efficient prophylactic measures. In the larger cities few practitioners who entered the hospitals after 1885 know smallpox except from books. Between 1888 and 1907 there were in Vienna, in a population which has increased from 1,750,000 at the former date to over 2,000,000 at the present, only 72 sporadic cases of smallpox, mostly imported from Italy, Russia or Roumania.

A movement for compulsory vaccination has lately originated among medical practitioners, and is supported by many of the educated laity. The violent opposition of the so-called *Naturheiler* or "nature-cure" quacks has caused many persons to refrain from being vaccinated. Last year's epidemic taught a forcible lesson on the value of vaccination, for in 140 out of 172 cases the patients had never been vaccinated, and in the remainder they had not been immunized.

Pharmacology

Patent Remedies for Piles.

The investigation by the *British Medical Journal* (July 11, 1908) of the nostrums most extensively advertised for piles shows that the manufacturers rely either on local applications, internal remedies or both. The local remedies generally contain an emollient base, but few ingredients of active properties. One contained calomel, zinc oxid, phenol, beeswax and soft paraffin, and another lead acetate, creosote, resinoid substance, vegetable tissue, hard paraffin and oil of theobroma. The former preparation is used as an ointment, the latter as suppositories.

The preparation of the greatest interest to us is Munyon's Pile Ointment. The label states: "Munyon's Pile Ointment permanently cures all forms of piles or hemorrhoids and immediately relieves pain, burning, itching and distress at the outlet of the bowels."

According to the *British Medical Journal:* "Analysis showed the ointment to consist of soft paraffin, with a trace of ichthyol sufficient to give a slight odor, but not enough to affect the appearance of the ointment. Experiments showed that 0.2 per cent. or over of ichthyol appreciably darkens the color of soft paraffin, and it appears, therefore, that less than this proportion is present. Estimated cost of one ounce of the ointment, one farthing" (half a cent). Its price in England is one shilling (24 cents) a package.

CELLASIN.

Report of the Council on Pharmacy and Chemistry.

The following report was submitted to the Council by a committee:

> *To the Council on Pharmacy and Chemistry:*—Cellasin, a product of Mead Johnson & Co., was first submitted under the title of "Cellulin," with the claim that it is a ferment which is absorbed unchanged into the tissues; that it cures diabetes mellitus, and that it cures tuberculosis and establishes immunity against this disease. As these claims were unsupported by reliable evidence, they were considered extravagant and highly improbable, and it was therefore voted that the product be refused recognition. The manufacturers then indicated a willingness to modify the therapeutic claims, and the product was reconsidered and the statements made in regard to its chemical properties were submitted for verification to the committee on chemistry. This committee reported as follows:
>
> *Report of the Committee on Chemistry.*—We have completed our experiments on Cellasin, prepared by Mead Johnson & Co., and we are obliged to report that the claims made for it are only in part true. Our tests show that it has at best only very weak fat-splitting power, too weak to make it of any real value. After digestion with pepsin and hydrochloric acid the same slight fat-splitting power seems to be present and this part of the claim of the manufacturer is admitted. We find also that the substance resists the action of 2.5 per cent. hydrochloric acid, as submitted in the modified claims of the firm. As the action on fat is very weak we have not been able to make a perfectly satisfactory experiment on the question of the behavior with trypsin mixtures. On receipt of the new advertising circular we have made further extended tests of Cellasin from which we conclude that the claims as published are very greatly exaggerated. The action of the product on cane sugar is so weak that a quantitative change could not be detected in 24 hours, either by the process recommended by the manufacturers or by tests of our own. The action on starch is quite distinct from that described and likewise very faint. Although a faint fat-splitting power is present, as reported above, the claims as a whole are so far from the truth that it is recommended the product be refused recognition.

The committee on pharmacology reported that the firm was still making extravagant claims for the product and endorsed the recommendations of the committee on chemistry. In accordance with the recommendations of the two committees the Council voted that Cellasin be refused recognition on account of exaggerated chemical and therapeutic claims. The above was submitted to Mead Johnson & Co., who in reply strongly insisted on the correctness of their claim that the action of Cellasin on carbohydrates and fats in acid solution is most powerful. In view of the emphatic assertions of the manufacturer the committee again made tests with Cellasin and reported as follows:

> *Second Report of the Committee on Chemistry:*—We must again report regarding Cellasin that our findings are entirely at variance with the claims submitted by the manufacturer. Since Mead Johnson & Co. have advertised widely that their product has been submitted to the Council for inclusion in New and Non-Official Remedies, we suggest that the reasons for its rejection be published. We have given an unusual amount of time to the investigation of Cellasin and every opportunity has been afforded the firm to substantiate its claims. These claims could not be verified in any samples submitted, and the committee now and finally recommends the adoption and publication of the report.

On motion, the report was adopted and its publication directed. W. A. Puckner, Secretary.

Correspondence

Buffalo Lithia Water.

Chicago, Aug. 10, 1908.

To the Editor:—A few weeks ago the representative of the Buffalo Lithia Water called on me at my office. In discussing the merits of the water, I called his attention to the fact that it contained merely a trace of lithium. He replied that they made no claim for it as a lithia water, but sold it as an alkaline water which the physician might prescribe as he saw fit. He said that the name was selected simply to distinguish it from the host of other mineral waters. If my memory serves me correctly, this constitutes a remarkable change of front on the part of the promoters of this widely advertised mineral water. Not long ago it was highly vaunted as a uric acid eliminant depending on its content of lithium for its therapeutic action. Doubtless many physicians during the last twenty years have prescribed gallons of this water, sometimes for patients who could ill afford to pay for it, on the supposition that it contained lithium, and was, therefore, a valuable remedy against uric acid. What is the reason for the abandonment of this claim on the part of the proprietors? Is it because, following closely the advance of medical science as they must, they have learned that lithium is no longer regarded as a uric acid eliminant? Or have they learned for the first time from the government analyses that their water contains practically no lithium? The claim that the water is an alkaline water is no better supported by facts than that it is a lithia water. This also they can learn from the government report if they will read it carefully. The alkaline theory will doubtless serve its purpose until attention is called to the fact that it is a calcic saline water. It will be interesting then to learn what quality will next be invoked to sell it. It seems as if it is time that physicians should awake to an appreciation of the need of caution in accepting the claims of those who have mineral waters to sell. There is as much need for supervision here as in the case of proprietary remedies. * * * *

Comment:—Were it not for the tragic element it would be ludicrous to note the way in which manufacturers and proprietors of medicinal agents adjust themselves to varying conditions. Adaptation to environment is the essential element for success. This is illustrated by the facts brought out by our correspondent in the above letter.

When Buffalo Lithia Water was first put on the market uric acid was the scapegoat on which most of the sins of etiologic ignorance were heaped. Contemporaneous with, and in a sense a corollary of, the uric acid fallacy was another hypothesis, viz., that lithium was the uric acid eliminant *par excellence.* The proposition, therefore, was a simple one: Uric acid causes disease, lithium eliminates uric acid; *ergo*, Buffalo Lithia Water, because it contains lithia, eliminates disease. Q. E. D.

The result of these two theories, combined with skilful advertising on the part of the proprietors, made Buffalo Lithia Water a valuable piece of property. "The mills of the gods grind slowly," but finally government and other chemists, with small appreciation of the psychic and commercial value of the name, demonstrated that Buffalo Lithia Water contains but the merest trace of lithium—an amount almost as small as the hypothetical gold in a widely advertised liquor cure.

Now, therefore, it is an "alkaline diuretic." While government analysts dispute the claim that it is an alkaline water, yet its proprietors may rest assured that the statement regarding its diuretic properties is beyond contradiction, for water of any kind is the simplest, surest and most universal of diuretics. It may be noted in passing that the more recent advertisements refer to Buffalo Lithia Springs Water instead of Buffalo Lithia Water. This is a distinction with a difference and the change in title has probably been brought about by that great agency for comparative righteousness in advertising—the national Food and Drugs Act!

Miscellany

Piano Dealers and Fraudulent Advertising.—The following is the preface to a pamphlet on "Fraudulent Advertising" issued by the National Association of Piano Dealers of America, which is referred to editorially in this issue. Not only are the principles expressed so admirable in themselves, but the pamphlet is such a manifest justification, from an independent quarter, of the position taken by the American Medical Association in regard to chicanery and deceit in proprietary medicines, that we reproduce it here:

"The following address, read before the National Association of Piano Dealers of America, at its seventh annual convention held in New York City, June 8, 9, 10, 1908, confines itself to a discussion of those occasional practices in the piano trade which bring discredit on the general high character of the piano business.

"Hundreds of advertisements in other lines are, however, much more reprehensible and despoil the confiding of their savings to a far greater extent.

"The glowing promises contained in the advertisements of many 'patent medicines,' electric belts, clairvoyants, fortune-tellers, fictitious mining schemes, race track tips, and other 'get rich quick' schemes induce thousands of innocent persons to pay out their money to enrich those who give little but promises in return. It would seem that the time had come in our social and commercial development when something should be done by our national government to regulate public announcements of this kind in order to protect the confiding from the designing and unscrupulous; when all fraudulent and misleading advertisements should be excluded from the mails as well as those few most glaring ones which are now, through a multiplicity of complaints, occasionally brought to the notice of the postoffice authorities.

"It was through this conviction on the part of the members of the National Association of Piano Dealers of America that this address was, by unanimous vote, ordered printed and distributed; that the executive committee was instructed to investigate violations of the penal code of the State of New York as regards fraudulent advertising, and the following resolution was unanimously adopted:

> "WHEREAS, Much of the present day advertising is misleading, exaggerated and tends not only to deceive the public, but to undermine the public confidence on which all business depends; and
>
> "WHEREAS, There has been introduced in congress a bill looking to the prevention of fraudulent, misleading, exaggerated and deceptive advertising; be it
>
> "*Resolved*, That we, the National Association of Piano Dealers of America, in seventh annual convention assembled, do hereby request that the Senators and Representatives of the United States shall pass a law, fashioned after similar laws in England and Germany, and in line with the policy of the pure food laws of our own country; and be it
>
> *Resolved*, That it is the sense of this Association that a commission, similar to that established by the pure food laws, should be established to pass on fraudulent advertising, and through warnings and other means seek to suppress such advertising, and to be empowered to institute proceedings against those who, after due notification, persist in such advertising; and be it
>
> *Resolved*, That this act should be so drawn that periodicals continuing to publish advertisements, determined by such commission to be fraudulent, should be subject to fine and exclusion from the mails of the United States until such misleading and fraudulent advertisements be excluded; and be it
>
> *Resolved*, That this Association promise its support to such legislation, and invites the cooperation of all similar associations throughout the United States, to the end that public confidence in printed statements shall be increased."

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

TESTS FOR FORMALDEHYD IN MILK.

DECATUR, ILL., Aug. 29, 1908.

To the Editor:—In THE JOURNAL, Aug. 29, 1908, page 778, in reply to a query, you state that the best tests for formaldehyd in milk are Hehner's test and Leach's test. In my experience, Schiff's reagent is far better than either of these. It is prepared as follows:

Aqueous solution of magenta (fuchsin) 0.5 per cent.	40 c.c.
Distilled water	250 c.c.
Aqueous solution sodium bisulphite (sp. gr. 1.375)	10 c.c.
Pure concentrated sulphuric acid	10 c.c.

Mix and allow to stand until colorless.

Two c.c. of this solution are added to a test tube two-thirds full of suspected milk and the tube shaken. If formaldehyd be present a pink or lilac color will appear in from 30 to 60 seconds.

LYNN M. BARNES.

ANSWER.—The test above given is a general test for aldehyds; that is, aldehyds generally when added to a solution of fuchsin which has been decolorized by means of a sulphite, will restore the color of the fuchsin. While it is not a specific test for formaldehyd, nevertheless it may safely be used to test milk, since formaldehyd is the only aldehyd liable to occur in it. One objection to the method lies in the care needed to prepare the reagent. The reagent should not only be freshly prepared, but considerable care should be used to avoid an undue excess of bisulphite. Since aqueous solutions of sodium bisulphite rather rapidly deteriorate with age, the amount of the solution to be used will depend on its sulphite strength. On the other hand, the method of Hehner, or preferably that of Leach, is easily applied and rarely fails, and these methods are among the methods for the detection of formaldehyd in milk as adopted by the Association of Official Agricultural Chemists (Bulletin 107, U. S. Department of Agriculture, Bureau of Chemistry, page 185). It is, of course, desirable that the presence of formaldehyd in milk be demonstrated by two or more tests. Beyond the tests above given, among the confirmatory tests, the phenylhydrazin hydrochlorid and ferricyanid method is recommended.

This method may be applied directly to liquid foods or to an aqueous or alcoholic extract of solid foods. To from 3 to 5 c.c. of liquid food or extract of the same add a lump of phenylhydrazin hydrochlorid about the size of a pea, from 2 to 4 drops (not more) of a 5 to 10 per cent. solution of potassium ferricyanid, and from 8 to 12 drops of an approximately 12 per cent. solution of sodium hydroxid. The method is not applicable to preparations containing blood coloring matter. In such cases use nitroprussid in place of the ferricyanid. Alcoholic extracts from foods must be diluted with water to prevent the precipitation of potassium ferricyanid.

Apply the method directly to milk without any preparation of sample. In the case of meat finely comminute the sample, extract with two volumes of hot water, and employ the liquid pressed out for the test. Warm fats above the melting point with 10 c.c. of alcohol (80 to 95 per cent. by volume), thoroughly shake, cool, and filter through a moistened paper, using the filtrate for the examination.

When formaldehyd is present to the extent of more than 1 part in 70,000 to 80,000 in the solution tested, a distinct green or bluish green reaction is obtained. In more dilute solutions the green tint becomes less marked and a yellow tinge tending toward greenish brown is formed.

CRESCO FLOUR AND GLUTEN FLOUR.

WILLINGTON, KAN., Aug. 22, 1908.

To the Editor:—A diabetic patient bought a so-called gluten flour (labelled "Cresco" flour) from a local druggist. After using it for some time he was told that it was not a gluten flour; he then brought the preparation to me and I also told him it was not a gluten flour. The druggist, who claimed it was the same as a gluten flour, wrote to the manufacturers, Farwell & Rhines, who replied that it no longer makes a gluten flour under that name, but that the preparation Cresco flour takes its place. The firm also claimed that there is no such thing as a pure gluten flour, that such a preparation would make a glue rather than a bread, etc. Please tell me what is known of the reliability of Farwell & Rhines' products and whether their Cresco flour will take the place of gluten flour.

W. M. Martin, M.D.

Answer.—An examination of diabetic foods was made by Dr. A. L. Winton, who at that time was connected with the Connecticut Agricultural Experiment Station, but who is now in charge of the Chicago Laboratory of the United States Department of Agriculture. His report was abstracted in The Journal for June 29, 1907, page 2198, of which the following is a part:

"The author quotes from the circulars of Farwell & Rhines and of the Jireh Diabetic Food Company, two firms which manufacture food for diabetics, which contain considerable starch and no marked increase in protein. The flours thus prepared appear to possess no advantage for diabetics over ordinary wheat flour. The manufacturers attempt to justify the presence of starch in their products by appealing to medical authority for the truth of their assertion that some starch is necessary for diabetics. These statements are misleading in consequence of the fact that they fail to state that this applies only to a limited class of diabetics. They also try to make it appear that the starch has been changed so as to make it less objectionable. The author's analyses and microscopic examination do not indicate that the change, if any is of a kind that renders the materials less objectionable for diabetic use. In the author's opinion the statements are 'contrary to the best medical experience, since they urge the use of the very food elements which have been shown, without question, to aggravate the disease most seriously.' "

The analyses of Gluten Flour, Cresco Flour and Special Diabetic Flour, manufactured by Farwell & Rhines, Watertown, N. Y., given in Dr. Winton's report, showed that these preparations contained an amount of starch practically equal to that of ordinary wheat flour. Winton concludes, therefore, that they possess no advantages to diabetic patients over ordinary wheat flour.

The statement that gluten flour will not make a satisfactory food is not correct. Flours that are practically free from starch are on the market and can be used. It is just as essential to know how to use such flours so as to prepare a palatable product as it is to get a reliable flour—a fact frequently overlooked. Winton, in the report referred to, gave the following recipe for home-made gluten meal biscuit:

Gluten Meal Biscuit.—"To one egg add one heaping saltspoonful of salt and beat; then add 6 tablespoonfuls of cold water and beat until quite thick or until it becomes in quantity from one to one and one-half pints, and into this beat one tablespoonful of thin cream; add 2 heaping tablespoonfuls of dry gluten, stir this into the previous mixture; stir occasionally during one-half hour until of the consistency of thick gruel; bake 35 minutes in well-buttered muffin pans in hot oven."

We presume that Farwell & Rhines no longer sell their product under the name "gluten flour," as under the Food and Drugs Act this would constitute misbranding.

SCARLET FEVER WITHOUT RASH.

Santa Fe, N. M., Aug. 22, 1908.

To the Editor:—During a recent epidemic of scarlet fever in this city, in common with other physicians, I was much surprised at the high percentage of cases in which no rash was apparent. It was not an uncommon occurrence to find two children out of three in one family showing no rash, while a third had the disease in the more typical form. From my own experience and that of others, at least during the height of the epidemic, fully 25 per cent. of the cases were without eruption. I think from the fact that diphtheria was not even endemic, and that a history of contagion was nearly always easily obtained and also from the association of the cases, their symptomatology and sequelæ when the duration was sufficient to allow the same to develop, that the diagnosis may be accepted, although in my own cases no bacteriologic examinations were made. The type of the epidemic was exceedingly malignant and few of the patients without eruption recovered. Can you give me the modern conception of the factors causing or contributing to the erythema and those to the contrary?

James A. Rolls.

Answer.—Even in severe epidemics of scarlatina, so large a proportion of cases without eruption as our correspondent describes, is most rare. In such "ataxic," "cerebral" or "adynamic" cases, the system is flooded with toxins of a most powerful nature, and death may occur before the rash has appeared. In some of these cases running a very rapid course, a brief rash, lasting but a short time and later marked by a cyanotic color, may be easily missed. The nervous centers appear to be most profoundly affected in this type of cases. That this is due to the character of the infection and resulting intoxication, is most probable. In the absence of any information as to the essential agents concerned in the production of scarlatina, it is impossible to arrive at any final conception of the various effects manifested by them in the human body.

ELIXIR OF GLYCEROPHOSPHATES.

Virden, Ill.

To the Editor:—Will you please tell me how the Elixir Glycerophosphate of Lime and Soda is made?

E. K. Lockwood.

Answer.—The following is given in the National Formulary:

ELIXIR GLYCEROPHOSPHATUM.

	Metric.		Apothecaries.	
Sodium glycerophosphate (75 per cent.)........	25.	gm.	360	grains
Calcium glycerophosphate	8.75	gm.	128	grains
Phosphoric acid (U. S. P. —85 per cent)........	8.	gm.	115	grains
Glycerin	300.	c.c.	9½	fluidounces
Aromatic elixir (U. S. P.)	300.	c.c.	9½	fluidounces
Distilled water, sufficient quantity to make.....	1,000	c.c.	32	fluidounces

Dissolve the glycerophosphates and the acid in 300 c.c. (or 9½ fluidounces) of distilled water, add the glycerin and elixir, and finally enough distilled water to make 1,000 c.c. (or 32 fluidounces); then mix well and filter.

Four c.c. (1 fluidrachm) contains 0.65 gm. (1 grain) of absolute sodium glycerophosphate, and 0.32 gm. (½ grain) of calcium glycerophosphate. Average dose: 4 c.c. (1 fluidrachm).

BIDLOO'S ANATOMIC DISSECTIONS.

Louisville, Ky., Aug. 24, 1908.

To the Editor:—I have a volume which contains one hundred and five full-page wood cuts of anatomic dissections, each having the descriptive text in Dutch. This volume was published in 1690, and the author was Govard Bidloo, who, I believe, was a professor in the University of Leyden. I want to learn more about the book and its value and author. The volume is bound in pigskin, is 21 inches long, 15 inches wide and about 3 inches thick.

D. E.

Answer.—Bidloo (1649-1713) was physician to William III of England, and in 1694 became professor of anatomy and surgery at the University of Leyden. Further information regarding him can be obtained from La Grande Encyclopedie which will be found in many of the large libraries. The first edition of Bidloo's work, dated 1685, was in Latin and copies are valuable. Cowper published the same plates in 1697 with a more complete text, and a copy of this has sold for $15. It is estimated that the Dutch edition of 1690 would probably be worth from $10 to $15. Further information may be found in Choulant's Geschichte der anatomischen Abbildungen.

SODIUM SUCCINATE IN GALLSTONES.

Chicago, Aug. 27, 1908.

To the Editor:—Allow me to correct the statement on page 692 of The Journal, Aug. 22, 1908, that "sodium succinate is not mentioned by standard text-books as useful for the treatment of gallstones." In Tyson's Practice of Medicine, reference is made to this drug. I have used sodium succinate in 5 gr. doses three times a day in chronic cholangitis for a number of years with apparent good results.

A. Jacobson, M.D.

Answer.—Tyson, in the text-book referred to (3d Edition, page 448), says: "I have been in the habit of placing my patients, between attacks, on the succinate of sodium, in doses of 5 grains (0.32 gm.) three times a day, and it has so happened that I have seldom met a recurrence in one of these cases, although many of them passed out of my observation and may have had attacks without my knowledge."

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Sept. 5, 1908:

Ashford, M., first lieut., ordered to proceed from Washington Barracks, D. C., to camp of instruction, Fort Benjamin Harrison, Ind., and rejoin Co. C, Hospital Corps.

Baily, H. H., capt., ordered, in addition to his present duties at Fort Myer, Va., to make the necessary sanitary inspection of the rooms occupied by the clerical force of the War Department during the absence of Major Paul F. Straub, Medical Corps.

Doerr, C. E., cont. surg., now at Cincinnati, Ohio, will report in person to the commanding officer, Fort Thomas, Ky., for temporary duty.

Daywalt, G. W., M. R. C., ordered to proceed from Depot of Recruits and Casuals, Angel Island, to Presidio of San Francisco, Cal., for temporary duty.

Koyle, F. T., cont. surg., orders to proceed from Manila, P. I., to the United States, revoked.

Carter, W. F., major, leave of absence extended one month.

Mason, C. F., major, appointed member of a board of officers to meet at Pittsburg, Pa., for the purpose of examining the plant for the purification of water by ozone now in operation at the Homeopathic Hospital in that city.

Jones, H. W., first lieut., granted three months' leave of absence, to take effect about Jan. 15, 1909, upon the arrival of the transport *Buford* at Manila, P. I. He is authorized to return to the United States via Asia and Europe.

Rhoads, T. L., capt, orders for examination for promotion at Manila, P. I., revoked.

Coffin, J. M., capt., leave of absence extended one month.

Roberts, E. E., M. R. C., relieved from duty at Fort Logan H. Roots, Ark., and will proceed to Fort Sill, Okla., for duty.

George, W. R. S., M. R. C., relieved from duty at Fort Greble, R. I., and ordered to Fort Totten, N. Y., for duty.

Wertenbaker, C. I., M. R. C., relieved from duty at Madison Barracks, N. Y., and ordered to Fort *Wadsworth, N. Y., for duty*.

Birmingham, H. P., lieut col., relieved from duty as member examining board for promotion of medical officers, to meet at Washington, D. C.

Arthur, W. H., lieut col., appointed member examining board, to meet at Washington, D. C., for promotion of medical officers.

Brewer, I. W., M. R. C., granted 13 days' leave of absence.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Sept. 5, 1908:

Mayers, G. M., P. A. surgeon, granted sick leave for three months, when discharged from treatment at the Naval Medical School Hospital, Washington, D. C.

Ely, C. F., P. A. surgeon, detached from the *Hartford* and ordered to the *Charleston*.

Moran, C. L., asst.-surgeon, detached from the Naval Recruiting Station, Dallas, Texas, and ordered to course of instruction at the Naval Medical School, Washington, D. C.

Hayward, A. B., asst.-surgeon, detached from the Marine Recruiting Station, Pittsburg, Pa., and ordered to the Naval Recruiting Station, Dallas, Texas.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Sept. 4, 1908:

SMALLPOX—UNITED STATES.

California: San Francisco, Aug. 15-22, 4 cases.
Indiana: Indianapolis, Aug. 17-23, 1 case.
Kansas: Kansas City, Aug. 16-22, 1 case; Topeka, 1 case.
Kentucky: Covington, Aug. 23-29, 1 case.
Minnesota: Minneapolis, July 1-31, 4 cases.
Missouri: St. Joseph, Aug. 16-22, 7 cases.
Montana: Butte, Aug. 12-18, 1 case.
North Carolina: Greensboro, Aug. 16-22, 1 case.
Ohio: Cincinnati, Aug. 22-29, 1 case; Dayton, Aug. 16-22, 1 case.
Utah, General, July 1-31, 19 cases, 1 death.
Washington: Seattle, July 1 31, 16 cases.
Wisconsin: LaCrosse, Aug. 16-22, 5 cases; Milwaukee, Aug. 9-22, 3 cases.

SMALLPOX—FOREIGN.

Arabia: Aden, July 26-Aug. 3, 4 deaths.
Brazil: Rio de Janeiro, July 13-26, 1,078 cases, 490 deaths; Pernambuco, July 1-15, 26 deaths; Santos, July 6-19, 6 deaths.
China: Hongkong, July 12-18, 1 case, 1 death; Shanghai, July 13-19, 1 death.
Ceylon: Colombo, July 12-18, 4 cases.
Ecuador: Guayaquil, July 19-25, 6 deaths.
Egypt: General, July 18-22, 28 cases; Cairo, July 31 Aug. 5, 2 cases, 2 deaths.
France: Paris, Aug. 2-8, 3 cases.
Germany, General, July 19-25, 5 cases; Chemnitz, Aug. 2-8, 1 case; Königsberg, Aug. 2 8, 1 case.
Great Britain: Liverpool, Aug. 9-15, 1 case.
India: Calcutta, July 12-18, 8 deaths.
Italy: General, Aug. 3-9, 11 cases; Palermo, July 5-Aug. 1, 7 cases, 1 death.
Java: Batavia, July 12-18, 5 cases.
Mexico: Mexico City, June 28-July 11, 49 deaths.
Philippine Islands: Manila, July 5-11, 21 cases, 3 deaths.
Spain: Valencia, Aug. 9-15, 1 case, 1 death.
Turkey in Asia: Bagdad, July 12-18, 20 cases, 4 deaths.
Turkey in Europe: Constantinople, Aug. 3-16, 10 deaths.
Zanzibar: July 8-21, 1 case, 1 death.

CHOLERA.

Ceylon: Colombo, July 12-18, 2 cases, 2 deaths.
China: Hongkong, July 12-18, 10 cases, 6 deaths.
India: Bombay, July 1-30, 12 deaths; Calcutta, July 12-18, 19 deaths; Madras, July 18-24, 15 deaths; Rangoon, July 12-18, 1 death.
Russia: Astrachan, July 22-31, 4 cases, 2 deaths; Zaritzyne, July 24-Aug. 6, 96 cases, 55 deaths.
July 19-31, present in Samara, Simbirsk and Tamboy government districts.

YELLOW FEVER.

Brazil: Bahia, July 16-22, 3 cases on an Italian bark; Para, June 25-Aug. 6, 8 cases, 7 deaths.
Ecuador: Guayaquil, July 19-25, 1 death.
Martinique: Fort de France, Aug. 2-8, 2 cases, 1 death.
Mexico: Vera Cruz, Aug. 22-28, 1 case, 1 death.

PLAGUE.

Brazil: Bahia, July 23-29, 1 case; Rio de Janeiro, July 13-19, 2 cases.
China: Hongkong, July 12-18, 20 cases, 20 deaths.
India: General, July 5-18, 1,014 cases, 834 deaths; Bengal, June 28-July 18, 54 cases, 54 deaths; Bombay, July 8-21, 67 deaths; Calcutta, June 28-July 18, 69 deaths; Rangoon, June 28-July 18, 137 deaths.
Mauritius: May 1-31, 1 case, 1 death.
Turkey in Asia: Bagdad, Aug. 2-8, 1 case, 2 deaths.
Venezuela: Caracas, July 25-Aug. 9, 7 cases, 4 deaths.

Association News

NEW MEMBERS.

List of new members of the American Medical Association for the month of August, 1908:

ALABAMA.

Bouldin, T. J., Hollywood.

ARIZONA.

Adamson, E. W., Douglas.
Bell, W. M., Phoenix.
Bridge, G. A., Bisbee.
Greene, W. A., Douglas.
Hart, F. J., Bisbee.
Ketcherside, J. A., Phoenix.
Lund, Carl H., Douglas.
Miner, L. L., Bisbee.
Tuttle, L. J., Douglas.

ARKANSAS.

Harkins, R. A., Ratcliff.
Thompson, C. E., Ben Lomond.
Wadley, L. D., Wesson.

CALIFORNIA.

Barney, T. R., Berkeley.
Baker, W. C., San Mateo.

COLORADO.

Gotthelf, I. L., Denver.

CONNECTICUT.

Arnold, H. S., New Haven.

FLORIDA.

Greiner, C. M., Jacksonville
Sengstak, E. P. E., Jacksonville.

GEORGIA.

Floyd, W. B., Plainville.

ILLINOIS.

Buehler, W. E., Chicago.
Danell, Karl A., Chicago.
Eaton, Matilda, Cambridge.
Jipson, N. W., Chicago.
Kimery, H. A., Chicago.
Lowell, I. S., Douglas.
Masslow, W. C., Chicago.
Mengle, S. G., Peru.
Mershimer, J. M., Chicago.
Minnick, E. M., Moline.
Murray, John, Joliet.
Noggle, P. L., Cooksville.
Owens, J. C., Plainfield.
Peterson, M. D. E., Rankin.
Pirosh, Sigmar, Chicago.
Pumphrey, G. E., Ferris.
Ross, C. F., Saunemin.
Skaggs, C. S., Harrisburg.
Snider, A. B., Tinley Park.
Wilmot, C. M., Cuba.
Zinser, H. A., Washington.

INDIANA.

Baker, W. H., South Bend.
Bostwick, J. G., Mishawaka.
Carter, L. D., Richmond.
Cleveland, W. F., Evansville.
Coombs, D. H., Charlestown.
Costello, H. F., Decatur.
Cox, L. T., Napoleon.
Deputy, E. M., Dugger.
Dillinger, J. R., French Lick.
Egbert Roy, Indianapolis.
Graves, A. E., New Waverly.
Gray, O. F., Spencer.
Hawley, M. C., Logansport.
Henley, Glenn, Fairmount.
Hervey, S. W., Fortville.
Holliday, D. A., Fairmount.
Kauffman, D. E., Monroeville.
Kinneman, J. G., Goodland
Kruse, E. H., Fort Wayne.
Kunkler, Joseph, Terre Haute.
McClintock, C. W., Pittsboro.
McFarland, O. G., Hamilton.
McKay, J. D., Marion.
Miller, Harry, National Mil. Home.
Rayl, C. C., Monroe.
Replogle, F. M., Dunkirk.
Rubsam, Jos., Logansport.
Sellers, C. A., Montpelier.
Schwartz, W. D., Portland.
Shadday, J. H., Vevay.
Shook, B. O., Spencerville.
Smith, W. E., Decatur.
Stotelmyer, C. I., Hagerstown.
Thompson, W. H., Harlan.
Titus, P. S., Fort Wayne.
Tucker, G. W., Dana.
Vanderburg, J. M., Albany.
Westhafer, E. K., New Castle.
White, B. S., Greensburg.

IOWA.

Allen, J. R., Waterloo.
Bellinger, F. E., Council Bluffs.
Carpenter, L. H., Grundy Center.
Downing, L. M., Wellman.
Hammer, Marion R., Newton.
Merkle, A. E., Berwick.
Phillips, A. B., Clear Lake.
Struck, K. H., Davenport.

KANSAS.

Thomas, C. A., Danville.

KENTUCKY.

Adams, L. D., Smithland.
Allen, F. L., Morehead.
Blades, J. M., California.
Bristow, S. W., Powersburg.

MARYLAND.

Peels, I. R., Baltimore.
Scheller, C. R., Hagerstown.

MASSACHUSETTS.

Blenkhorn, James, Stoneham.
Foskett, G. M., Worcester.
Golden, Lazarus, Boston.
Nickerson, J. P., West Harwich.
Reed, L. D., Plymouth.

MICHIGAN.

Ash, C. W., St. Clair.
Blanchette, V. J., Walkerville.
Cardwell, J. F., Grand Rapids.
Carson, A. W., Ishpeming.
Ertell, W. F., Kalamazoo.
Fraser, R. C., Port Huron.
Ganung, Cora P., Lansing.
Grignon, Eugene, Menominee.
Hastie, J. D., Grand Rapids.
Holbrook, A. G., Coldwater.
McColl, J. A., Grand Rapids.
Morrison, J. S., Royal Oak.
Rumer, E. C., Flint.
Sadowski, R. J., Detroit.
Sassaman, F. W., Charlotte.
Scholtes, T. W., Munising.

MINNESOTA.

Abbott, W. P., Duluth.
Beard, R. O., Minneapolis.
Benson, G. E., Minneapolis.
Bergh, L. N., Montevideo
Brunelle, A. M., Cloquet.
Cuff, W. S., St. Paul.
Gilfillan, J. S., St. Paul.
Nyquist, J E., Cloquet.
Randolph, Wilson, Crookston.
Russell, Thomas, Grand Rapids.

MISSISSIPPI.

Carnes, W. A., Kosciusko.
Emerson, A. L., Eudora.
Smith, F. F., French Camp.

MISSOURI.

Blair, E. G., Kansas City.
Brown, F. H., Billings.
Casey, S. A., Lebanon.
Gebhart, O. C., St. Joseph.
Johnstone, P. A., Kansas City.
Mount, R. L., Polo.
Newman, S. E., St. Louis.
Pitts, Barton, St. Joseph.
Sanders, St. Elmo, Kansas City.
Scholz, R. P., St. Louis.

MONTANA.

Movins, A. J., Budger.

NEBRASKA.

Fitzsimons, A. W., Ohiowa.
Johnson, A. F., North Loup.
Longacre, O. E., Loup City.
Lucas, Voorhees, North Platte.

NEW JERSEY.

Butler, C. V., New Brunswick.
Durand, J. I., Atlantic City.

NEW YORK.

Andrews, H. D., Buffalo.
Bainton, J. H., New York City.
Bangs, L. B., New York City.
Barry, D. E., New York City.
Beard, J. J., Cobleskill.
Beatty, G. W., Brooklyn.
Billings, W. H., Jr., Buffalo
Brown, R. E., New York City.
Busby, A. H., New York City.
Carter, C. B., New York City.
Corning, J. L., New York City.
Darbois, E. O., Brooklyn.
Dockstader, C. H., New York City.
Fraenkel, Joseph, New York City.
Fichter, Louis, New York City.

Gage, J. E., Utica.
Goff, A. P., Cameron Mills.
Hasbrouck, J. F., New York City.
Hebenstreit, Robert, Buffalo.
Huey, A. J., New York City.
Humphreys, G. A., New York City.
Katz, David, New York City.
Kinney, C. W., New York City.
La Fetra, L. E., New York City.
Law, W. F., Syracuse.
Leiter, H. L., Syracuse.
Lewis, W. J., New York City.
Lewisohn, Richard, New York City.
Lyon, J. F., New York City.
McKenney, D. C., Buffalo.
Meury, J. B., Brooklyn.
Miller, G. N., New York City.
Montgomery, W. C., New York City.
Moore, J. L., Brooklyn.
Morris, Lewis, New York City.
Painter, H. M., New York City.
Parker, R. J., New York City.
Parrish, P. L., Brooklyn.
Rabinovitz, Meyer, New York City.
Reinthaler, J. E., New York City.
Rommel, W. G., Grapeville.
Rose, Achilles, New York City.
Ruppert, F. C., New York City.
Scott, A. W., Syracuse.
Solley, J. B., Jr., New York City.
Smith, C. H., New York City.
Soule, R. E., New York City.
Specht, W. H., New York City.
States, W. G., New York City.
Stephens, F. M., New York City.
Stoddart, James, Buffalo.
Sullivan, T. D., New York City.
Sumner, A. E., New York City.
Tannenbaum, Julius, New York City.
Unger, J. S., New York City.
Weed, H. M., Buffalo.
Wiener, Joseph, New York City.
Williams, L. R., New York City.
Wilson, F. N., New York City.
Wood, T. D., New York City.
Wylie, R. H., New York City.

NORTH CAROLINA.

Allan, Wm., Charlotte.
Buckner, R. G., Asheville.

NORTH DAKOTA.

O'Keefe, H., Grand Forks.

OHIO.

Benson, C. H., Columbus.
Brown, E. E., Cleveland.
Hain, C. O., Cleveland.
Herman, W. C., Cincinnati.
Hitchcock, C. S., Toledo.
Gerhardt, J. H., Sunbury.
Gregg, W. D., Springboro.
Kearney, B. F., Delaware.
Kistler, H. B., Sunbury.
Knight, J. A., Orient.
Masefield, H. Y., Columbus.
Phinney, F. D., Cincinnati.
Reger, H. S., Ironton.
Steward, Chas., Ashville.
Taylor, R. B., Columbus.
Weiss, W. S., Rock Creek.

OKLAHOMA.

Bagby, E. L., Fairfax.
East, T. H., Cement.
Logan, C. J., Alva.
Wall, G. A., Oklahoma City.

OREGON.

Chilton, L. W., North Powder.
Hall, C. G., Portland.

PENNSYLVANIA.

Abbaticchio, Nicholas, Latrobe.
Barnes, M. A., Pardoe.
Beale, B. F., Duncannon.
Brown, W. F., Philadelphia.
Evans, Jr., J. S., Philadelphia.
Fairbanks, Charlotte, Philadelphia.
Nelson, Wilhelmina T., Philadelphia.
Orr, J. D., Leechburg.
Parkin, E. H., Pittsburgh.
Phillips, B. W., Leeper.
Wessels, L. C., Philadelphia.

SOUTH DAKOTA.

Harris, H. G., Wilmot.
Morrison, C. W., Canton.

TEXAS.

Bevil, J. R., Batson.
Carpenter, D. A., Rhome.
Coffin, J. W., El Paso.
Hendricks, C. M., El Paso.
Lindsey, L. A., Whitt.
Sinks, E. D., El Paso.
Wheeler, F. B., Tilden.
Wright, Marcus O., El Paso.

VERMONT.

Perkins, C. N., Burlington.

VIRGINIA.

Campbell, W. A., Old Church.
Miller, E. R., Harrisonburg.
Payne, Jr., R. L., Norfolk.

WASHINGTON.

Cook, Frederick, Seattle.
Jones, Josiah, Tacoma.

WEST VIRGINIA.

Hatfield, S. D., Iaeger.
Preston, D. G., Eckman.

WISCONSIN.

Abbott, C. N., Fosterville.
Caffrey, A. J., Milwaukee.
Sommers, J. C., Madison.
Steenberg, H. S., Milwaukee.

WYOMING.

McArthur, H. J., Hanna.
Newcomer, P. W., Gillette.
Wingo, J. C., Rock Springs.

Medical Economics

New Medical Practice Act in Louisiana.

The Labbe bill, which has been signed by the governor, while in the form of an amendment to the medical law of 1894, practically constitutes a new law. It provides that any person (dentists and osteopaths excepted) who shall enter on the practice of medicine in any of its branches shall present to the State Board of Medical Examiners a diploma from a college in good standing and shall also pass a satisfactory examination before the board in anatomy, physiology, chemistry, obstetrics, physical diagnosis, surgery, pathology, therapeutics and hygiene. Any person not using internal medication is exempt from examination in therapeutics. The board is authorized to license without examination applicants presenting satisfactory certificates from a board of medical examiners of any other state. The law provides for two boards, one composed of physicians recommended by the Louisiana State Medical Society and the other of physicians recommended by the homeopathic state society; members are to be appointed for six years. The boards are instructed to give annually, in one of the daily papers published in New Orleans, an official list of the registered physicians and surgeons of the state, which list is to be received in evidence by the courts of the state as proof that the physicians named therein are duly registered.

The definition of the practice of medicine is amended to read as follows:

> Any person shall be regarded as practicing medicine within the meaning of this act, who shall append the letters M.D. or M.B. to his or her name, or who shall examine, prescribe, direct or apply or shall profess or publicly advertise that he prescribes, directs or applies, for the alleged purpose of treating, curing or relieving any bodily or mental disease, infirmity, deformity, defect, ailment or injury of any person other than himself, any drug, instrument or force, whether physical or psychic, or of whatever nature or any other agency or means; whether such drug, instrument, force or other agency or means is to be applied or used by the patient or by any other person, and whether such prescribing, directing or applying be for compensation of any kind or be gratuitous; and any officer or agent, or employé or member of any corporation, association or partnership which does or professes or publicly advertises that it does examine for, treat, cure or relieve such diseases, ailments, deformities, defects, injuries or infirmities, in any of the modes mentioned in this section, shall be regarded as practicing medicine under the provison of this act.
>
> Farmers or planters treating without compensation their families, employés or tenants, plantation midwives, opticians fitting glasses, water-cure establishments and Christian Scientists are exempt.

The section regarding revocation of license is amended to read as follows:

> *If any person, licensed under this act, shall be convicted of a crime or of gross unprofessional conduct, the said board shall have the power to institute proceedings before any competent court for the purpose of having the permit or license granted by them to said physicians revoked, and if it shall be shown that the physician or midwife, so licensed, has been convicted of a crime or of gross unprofessional conduct, the said board shall revoke such license or permit.*

Satisfactory City Health Ordinances.

The new health ordinances of Paxton, Ill., are of interest as showing the increasing attention given to sanitary regulation on the part of many of our smaller cities. Beside providing for a board of health, the ordinances confer on the board full charge of the prevention, restriction and suppression of contagious diseases and of the sanitary condition of the city, giving it power to enter buildings, take samples of food, etc., for inspection, and to make arrests. All meats, vegetables and other foodstuffs, milk, cream, etc., are under the control of the board and specific regulations provide for the inspection and licensing of dairies and milk depots. Butcher shops and slaughter houses are required to be licensed, after proper inspection. The sale of ice, ice cream, poultry, second-hand goods, and all articles by which disease might be spread, is under the control of the board of health. The disposal of all slops, garbage and waste, as well as of diseased animals, is also under the control of the board. Lodging houses and schools and all public buildings are open to inspection and must comply with definite conditions. The distribution of samples of medicines is prohibited, except under license after submission of the samples to be inspected.

The ordinances are carefully drawn and will be of interest to any local health officers who are confronting any of the problems involved. If they are enforced as well as they are formulated, the people of Paxton are certainly to be congratulated on the manner in which their health is protected.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

First Month.

FOURTH WEEKLY MEETING.

VALVULAR LESIONS, RIGHT HEART.

TRICUSPID LESIONS.

REGURGITATION.

Due to (1) endocarditis, (2) secondary to left-heart lesions, mechanism of production. Characteristic signs: (1) systolic venous pulsation, (2) systolic murmur, location, transmission.

STENOSIS.

Age, sex, incidence. Symptoms and physical signs.

PULMONARY STENOSIS, AND REGURGITATION.

Incidence, signs and symptoms of each.

Pulmonary Murmurs, not Valvular.

(1) In health. (2) exertion or fever. (3) cardio-respiratory. (4) anemias. Murmur of mitral regurgitation.

DISEASES OF THE MYOCARDIUM.

Myocarditis

Acute interstitial, parenchymatous: pathology and etiology of each. Infarcts: fibrous myocarditis: degenerations: pathology of each. Clinical types. (a) Arrhythmic form. (b) arteriosclerosis with hypertrophy and dilatation. (c) sclerosis of coronary arteries.

Angina Pectoris.

Etiology: Age, sex, heredity, constitutional and infectious diseases, cardiac and arterial disease. Theories: (a) Neuralgia of heart. (b) muscular cramp, (c) ventricular distention from dilatation. (d) ischemia of muscle from coronary disease. Symptoms. Follows exertion, emotions, gastric distention, cold. Pain, character, degree, location, reflection, duration. Heart and pulse during attack.

CARDIAC NEUROSES

Palpitation.

Etiology: Age, sex; neurotic affections, emotions; acute infections; tobacco, coffee, etc.; association with organic lesions.

Arrhythmia. (See Osler: Practice of Medicine, 1907.)

1. From decreased conductivity of auriculo-ventricular bundle: (a) partial heart block, (b) complete heart block, (c) paroxysmal bradycardia.
2. From increased irritability of heart: (a) ventricular extra systoles, (b) auricular extra systoles.
3. From influence of extrinsic nerves: (a) vagus, (b) accelerator.
4. From disturbed diastolic filling of heart: (a) from violent respiratory movements, (b) adherent pericardium or mediastinal tumor, (c) associated respiratory and cardiac rhythm.

Tachycardia.

Etiology: In health, following fright, exercise, at menopause, uterine disease, from pressure on vagi, lesions of medulla. Paroxysmal tachycardia.

Bradycardia.

(1) Physiologic. (2) Pathologic: (a) acute infections, (b) disease of respiratory or digestive systems, (c) circulatory or nervous system, (d) urinary or sexual organs, (e) toxic agents, (f) constitutional diseases.

Heart-block.

Stokes-Adams' disease. Age, organic lesions, syphilis. Bundle of His: effect of compression; pathologic changes. Symptoms. Slow pulse, difference in first and second sounds. Cerebral attacks. Venous pulsations.

Monthly Meeting.

Etiology and Diagnosis of Malignant Endocarditis.

The Factors Which Influence the Prognosis of Chronic Valvular Disease.

The Physiologic and Therapeutic Actions of Digitalis, of Strophanthus.

Marriages

Harry Kahn, M.D., to Miss Grace Strasser, both of Chicago, September 2.

Charles F. Isaacs, M.D., to Miss Iva Hassett, both of Chicago, August 29.

Frederick W. Barry, M.D., to Miss Bertha Alene Allen, both of Colleen, Ill., August 24.

Joseph Thompson Antini, M.D., to Miss Mabel Leonard, both of St. Louis, August 17.

Harry Nathaniel Krohn, M.D., to Miss Hattie Davidson, both of Denver, Colo., August 27.

B. Dorsey Winchester, M.D., to Miss Ina Brent Moody, both of Louisville, Ky., August 27.

William S. Crouch, M.D., to Miss Leta Goode, both of Stafford, Kan., at Kingman, Kan., August 12.

Daniel O'Brien, M.D., Lapeer, Mich., to Miss Lucy Rickart of Gaines, Mich., at Montrose, Mich., August 19.

Henry Coleman Chalmers, M.D., Newport News, Va., to Miss Agnes Viola Brainard of South Orange, N. J., July 13.

Herbert C. Woolley, M.D., U. S. Army, Fort Davis, Alaska, to Miss Agnes Higinbotham of Victor, N. Y., at Seattle, Wash., August 24.

Deaths

William Barr Woods, M.D. Berkshire Medical College, Pittsfield, Mass., 1841; assistant surgeon of the Twenty-fifth Connecticut Volunteer Infantry and later regimental, brigade and division surgeon during the Civil War; representative from Somers in the state legislature of 1851-1852 and 1870; state senator from the Twentieth District in 1857; a member of the local board of school visitors for more than thirty years; died at his home in Somers, Conn., August 25, from dysentery, after an illness of two weeks, aged 88.

Calvin De Witt, M.D. Jefferson Medical College, Philadelphia, 1865; brigadier general, Medical Corps, U. S. Army, retired, who served during the Civil War as captain in the Forty-ninth Pennsylvania Infantry; entered the permanent establishment in 1867; was promoted to captain in 1870; to major in 1885; to lieutenant-colonel in 1898; to colonel in 1901, and to brigadier general immediately before his retirement on Aug. 9, 1903; died from heart disease at Fort Yellowstone, Wyo., September 3, aged 68.

Jacob Farnum Holt, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1859; a member of the American Medical Association; a surgeon in the Army for about three years during the Civil War; professor of anatomy, physiology and hygiene, and later professor of biology at the Central High School of Philadelphia; who accompanied Lieutenant Peary in his trip to the Arctic in 1891; died at his home in Philadelphia, August 30, from heart disease, after a short illness, aged 77.

George Hodge, M.D. Faculty of Medicine of Queen's University and Royal College of Physicians and Surgeons, Kingston, Ont., 1870; a member of the British, Canadian and Ontario medical associations; a member of the medical staff of Victoria Hospital, London, Ont., and professor of clinical medicine in the medical department of the Western University for twenty years; died at St. Joseph's Hospital, London, August 26, after an illness of several months, aged 61.

Isaac L. Millspaugh, M.D. College of Physicians and Surgeons in the city of New York, 1850; a member of the Medical Society of the State of New York; a member of the Old Richmond County Board of Health; acting assistant surgeon during the Civil War; physician of the New York City Farm Colony for more than twenty-five years, and commissioner of lunacy for the Borough of Richmond; died at his home in Richmond, August 27, aged 81.

Angus McLennan, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1873; of Inverness, N. S.; a member of the Inverness Common Council for sixteen years; of the Nova Scotia Legislative Assembly for four years, and member of Parliament from Inverness County for three terms; died in Port Hood, C. B., from cerebral hemorrhage, August 28, after an illness of two days, aged 64.

Frederick Rustin, M.D. New York University Medical College, New York City, 1897; a member of the Nebraska State Medical Association; professor of operative surgery in the John A. Creighton Medical College, Omaha; visiting surgeon to the St. Joseph's, Clarkson, Mercy and Douglas County hospitals, Omaha; was shot and killed—by himself, or by a person at present unknown—while entering his home in Omaha, September 2.

Edward Harris Johnson, M.D. Washington University School of Medicine, Baltimore, 1869; of Troy, Ala.; a member of the Medical Association of the State of Alabama, and a Confederate veteran; local surgeon for the Atlantic Coast Line; was struck by a train while making a professional call, August 27, and died a short time later, aged 63.

John M. Hamme, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1889; a member of the Kansas Medical Society; for the last four years state senator from the Twenty-third District; was found dead in bed in Cottonwood Falls, Kan., August 26, from heart disease, aged 45.

William E. Fraker, M.D. University of Nashville (Tenn.) Medical Department, 1873; twice a representative from Greene County (Tenn.) in the legislature; died suddenly, August 29, at his home in Rheatown from cerebral hemorrhage, after five years of invalidism due to injuries received in a railway wreck, aged 56.

Hugh McG. Willson, M. D. Albany (N. Y.) Medical College, 1856; Bellevue Hospital Medical College, New York City, 1870; surgeon during the Civil War; and formerly a well-known practitioner of San Francisco; died in his apartments in Los Angeles, August 15, after a long illness, aged 65.

Luther R. White, M.D. Medical School of Harvard University, Boston, 1878; coroner of Republic County, Kansas, from 1887 to 1897, but for the last ten years a resident of Edmond; died at his old home in Scandia, Kan., August 15, from cerebral hemorrhage, after a long illness, aged 58.

Edgar L. Phillips, M.D. Medical Department of Washington University, St. Louis, 1856; surgeon of an Illinois volunteer regiment during the Civil War; for many years a practitioner of Galesburg, Ill.; died at his home in Goshen, N. Y., September 1, after a prolonged illness, aged 81.

John B. Holt, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1878; a member of the American Medical Association and of the Maine Medical Association; for twenty years a practitioner of Berlin, N. H.; died at his home in that city, August 20, after a long illness, aged 61.

James Leon White, M.D. Jefferson Medical College, Philadelphia, 1881; four years member of the board of health of South Amboy, N. J.; for a portion of that time its president, and for three years borough physician; died at the home of his sister in that city, August 11, aged 47.

Ernest A. White, M.D. Medical Department of the Tulane University of Louisiana, New Orleans, 1892; while despondent from recurrent attacks of dyspepsia, and disease of the ear, is said to have shot himself through the head, August 18, and died a few minutes later, aged 36.

Calvin Knox Davison, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1869; a member of the Medical Society of New Jersey; died at his home in Stanhope, August 18, after an invalidism of nearly four years following influenza, aged 61.

Stephen Bartlett Kenney, M.D. Dartmouth Medical School, Hanover, N. H., 1861; assistant surgeon in the Army during the Civil War; for many years examining surgeon for the National Soldiers' Home, Hampton, Va.; died at Windsor, N. C., Dec. 30, 1907, aged 69.

Joseph A. Hodge, M.D. University of Louisville (Ky.) Medical Department, 1850; a member of the Kentucky State Medical Association, and one of the oldest practitioners of Henderson; died at his home, August 31, from cerebral hemorrhage, after a short illness, aged 80.

Dyer D. Webb, M.D. Rush Medical College, Chicago, 1883; a member of the Illinois State Medical Society; for thirty years a practitioner of Hoopeston, Ill.; died at his home in that city, August 24, from malignant disease of the neck, after a long illness, aged 57.

Augustus P. Throop, M.D. New York Homeopathic Medical College and Hospital, New York City, 1862; a veteran of the Civil War; formerly a practitioner of Palmyra, N. Y.; died at the Willard State Hospital, Nov. 28, 1907, after an illness of several years, aged 75.

Haywood B. Bartholomew, M.D. Rush Medical College, Chicago, 1895; a member of the American Medical Association; a member of the staff of the City and County Hospital, Denver; died suddenly at his home in Denver, from uremia, August 24, aged 38.

Abner Lewis, a retired practitioner of Oelwein, Iowa; for about 60 years a practitioner of Ohio, Indiana and Iowa; a senator from Elkhart and LaGrange counties, and later a member of the state legislature; died at his home in Oelwein, July 13, aged 89.

Luther Stowell Arnold (Examination, Vt.); for more than 40 years a practitioner of Londonderry, Vt.; and in 1889 representative to the state legislature; died at his home, Nov. 23, 1907, from cerebral hemorrhage, after an illness of 17 months, aged 73.

James Clifford Kennedy, M.D. Hahnemann Medical College and Hospital, Philadelphia, 1871; a veteran of the Civil War; and postmaster in Sharpsburg, Pa., for several years thereafter; died at his home in Pittsburg, August 25, from pneumonia, aged 75.

Alva L. Snyder, M.D. Eclectic Medical Institute, Cincinnati, 1860; a member of the Ohio State Medical Association; of Bryan, Ohio; was struck by the tongue of a carriage in a runaway accident near Bryan, August 14, and instantly killed, aged 80.

Louis Franklin Schussler, M.D. Hahnemann Medical College and Hospital of Chicago, 1884; of Alton, Ill.; a member of the Illinois State Medical Society; died at the home of his sister in New Sharon, Iowa, from cancer of the stomach, August 14, aged 54.

Elijah E. Winne, M.D. Vanderbilt University, Medical Department, Nashville, Tenn., 1859; of Sherman, Texas; surgeon in the Confederate service during the Civil War; died at Port Lavaca, Texas, Dec. 1, 1907, aged 77, from carcinoma.

Mary H. Bowen, M.D. Northwestern University Woman's Medical School, Chicago, 1876; for 30 years a practitioner of Chicago; died at the home of her son, August 29, from paralysis of the throat, after an illness of six months, aged 74.

Ava Michener, M.D. University of Iowa, College of Medicine, Iowa City, 1888; of Homer, Ill.; a member of the Illinois State Medical Society; died in El Paso, Texas, August 20, from asthma, after an illness of about two years, aged 50.

Isaac W. Herron, M.D. Medical College of the State of South Carolina, Charleston, 1865; a Confederate veteran; died at his home in Steele Creek Township, Mecklenburg county, N. C., Aug. 23, 1907, after a long illness, aged 75.

Alexander G. Orr, M.D. Jefferson Medical College, Philadelphia, 1869; a member of the Illinois State Medical Society; died at his home in Benton, August 25, from cerebral hemorrhage, after an illness of a few hours, aged 68.

Oscar Fitzerland Miller, M.D. University of Buffalo (N. Y.) Medical Department, 1858; a surgeon in the Army during the Civil War; died suddenly at the home of his son in Flint, Mich., August 11, from heart disease, aged 77.

Benjamin Colson (Registration, Maine, 1895); an eclectic practitioner of Bangor, Maine; who represented Monroe in the legislature in 1875; an active practitioner for 51 years; died at his home, January 14, aged 81.

Alvah W. Miller (license, Michigan, 1900, years of practice), a member of the Osceola County Medical Society; died at his home in Reed City, Nov. 25, 1907, from paralysis agitans, after an illness of one year, aged 67.

Nelson B. Richards, M.D. Western Reserve University Medical College, Cleveland, 1853; Bellevue Hospital Medical College, New York City, 1865; died at his home in Kansas City, Kan., August 28, aged 86.

Matthew H. Young, M.D. Jefferson Medical College, Philadelphia, 1859; surgeon of the Fourth Kentucky Mounted Infantry during the Civil War; died at his home in Ashland, Ky., August 19, aged 74.

Manuel H. Davis, M.D. University of Louisville (Ky.) Medical Department, 1881; of Mayslick, Ky.; died suddenly Aug. 11, 1907, in his automobile while en route to Blue Lick Springs, from his home.

Elbert Ferguson Nebeker, M.D. College of Physicians and Surgeons, Chicago, 1906; a member of the Illinois State Medical Society; died suddenly at his home in Danville, August 27, aged 37.

Samuel G. Bryning, M.D. Medical Department, Victoria College, Toronto, 1863; for nearly a third of a century a practitioner of Fulton, Ill.; died in a sanitarium in Chicago, January 8, aged 81.

Julius Godfrey Heene, M.D. University of Berlin, Germany; a practitioner of Jamaica Plains and Roxbury, Mass.; died at Mount Pleasant Home, Dorchester, Mass., Dec. 24, 1907, aged 85.

Enoch A. Baum (Examination, Minn., 1887); formerly of Litchfield, Minn.; died in the Fergus Falls State Hospital, January 19, from brain disease, after an illness of six years, aged 77.

Manley William Work, M.D. Dartmouth Medical School, Hanover, N. H., 1899; a member of the New Hampshire Medical Society; died recently at his home in Manchester, aged 48.

Gilford L. Laws, M.D. Vanderbilt University, Medical Department, Nashville, Tenn., 1891; died at his home near Wildersville, Tenn., Dec. 12, 1907, from heart disease, aged 68.

W. Reid Thompson, M.D. Kentucky University, Medical Department, Louisville, 1905; of Mackville, Ky.; a member of the Kentucky State Medical Association; died August 29.

George Bailey, M.D. University of Pennsylvania, Department of Medicine, Philadelphia; of Cambridge, Mass.; died in North Conway, N. H., Sept. 12, 1907, from heart disease, aged 80.

William C. Riley, M. D. Cooper Medical College, San Francisco, 1891; a member of the American Medical Association; died recently at his home in San Francisco, aged 40.

Samuel Y. McClung, M.D. Central College of Physicians and Surgeons, Indianapolis, 1880; died at his home in Pleasantville, Ind., August 27, after an extended illness, aged 50.

Edward G. Fahnestock, M.D. Pennsylvania Medical College, Gettysburg, 1850; a veteran of the Civil War; died at his home in Minneapolis, Minn., Dec. 8, 1907, aged 78.

A. D. W. Cutler, M.D. Memphis (Tenn.) Hospital Medical College, 1848; died at the home of his daughter in Gleason, Tenn., Dec. 23, 1907, from pneumonia, aged 79.

Charles McLeod, L.R.C.S.; L.R.C.P. Edinburgh; L.F.P.& S. Glasgow, 1903; of Winnipeg, Man.; died recently at Rochester, Minn., from ulceration of the esophagus.

Horace Blair Durant (Registration, Philadelphia County, 1887): assistant surgeon of volunteers during the Civil War; died recently at his home in Philadelphia.

Rufus P. Blacknall, M.D. Philadelphia; died at his home, near Arkadelphia, Ark., January 3, from pneumonia, after an illness of about two weeks, aged 73.

Titus Albright, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1885; died at his home in Hatfield, Pa., August 31, aged 48.

Chester S. Gitchell (years of practice, Michigan, 1900) died at his home in Hobart, June 26, 1907, from angina pectoris, after a short illness, aged 73.

Calvin Washington Corriher, M.D. Jefferson Medical College, Philadelphia, 1890; died April 19, at his home in Landis, N. C., from pneumonia, aged 66.

Daniel R. DeLong, M.D. Pennsylvania Medical College, Gettysburg, 1857; formerly of Stroudsburg, Pa.; died in Philadelphia recently, aged 74.

John H. Maddux, M.D. Atlanta (Ga.) Medical College, 1882; died at his home in Culloden, Ga., August 21, after an illness of two months, aged 52.

Alonzo Chamberlin, M.D. Bellevue Hospital Medical College, New York City, 1870; died at his home in Frost, Texas, August 23, aged 61.

O. W. Clark (License, Tenn., 1889): of Gainesboro, Tenn.; died suddenly at his home, near Rough Point, Tenn., Nov. 20, 1907, aged 45.

Myles S. Moore (License, Ark., 1903): formerly of Warren, Ark.; died in Hot Springs, Ark., August 17, after a brief illness, aged 66.

Joseph L. S. Whitney, M.D. University of Buffalo (N. Y.) Medical Department, 1853; died at his home in Union, N. Y., August 21.

William H. Robb (License, Missouri, 1889): a veteran of the Civil War; died at his home in St. Louis, March 5, 1907, aged 66.

Howard L. Hawkins, M.D. College of Physicians and Surgeons, Baltimore, 1896; died at his home in Pine, Colo., Nov. 30, 1907.

Garner Gahan, M.D. Manitoba Medical College, Winnipeg, 1892; of Hartney, Man.; is reported to have died in March last.

Robert Kerr (License, Tenn., 1889): died at his home in Savannah, Tenn., August 18, from pulmonary hemorrhage.

William Kiplinger (License, Ind., 1898); of Burkett, Ind.; died August 15, aged 73.

Death Abroad.

Harold Leslie Barnard, M.R.C.S., L.R.C.P. London, 1892; F.R.C.S. England, 1895; surgeon in charge of out-patients, London Hospital; demonstrator in surgery and pathology in London Hospital Medical College; a distinguished young surgeon of London; whose article on "Simulation of Acute Peritonitis by Pleuro-pneumonic Diseases" attracted widespread attention; co-inventor, with Leonard Hill, of the sphygmomanometer; died recently in Highbury, London, from heart disease, aged 41.

Society Proceedings

COMING MEETINGS.

Med. Soc. of the State of Pennsylvania, Cambridge Spgs., Sept. 14-17.
Internat'l Congress on Tuberculosis, Washington, Sept. 21 to Oct. 12.
American Assn. of Obstet. and Gynecol., Baltimore, Sept. 22-24.
Kentucky State Medical Association, Winchester, Sept. 23-25.
American Dermatological Association, Annapolis, Sept. 24-26.
Con. of State and Prov. Bds. of N. A., Washington, Sept. 25-26.
Nevada State Medical Association, Goldfield, Oct. 6-7.
Minnesota State Medical Association, St. Paul, Oct. 7-8.
Idaho State Medical Association, Boise, Oct. 8-9.

AMERICAN PUBLIC HEALTH ASSOCIATION.

Thirty-sixth Annual Meeting, held at Winnipeg, Manitoba, August 25-28, 1908.

The President, Dr. Richard H. Lewis, Raleigh, N. C., in the Chair.

Report of Committee on Ophthalmia Neonatorum.

Dr. F. Park Lewis, Buffalo, N. Y., chairman, presented a lengthy report on this subject.

Ophthalmia neonatorum is still a most prominent cause of much unnecessary blindness. The efforts that have been made have lessened its disastrous results in a large degree, but in many instances where it seems to be infrequent it will be found to be producing blindness among the poorest and most neglected classes. In these the burden on the public treasury is greater because the victims of this neglect almost inevitably become charges on the state. The responsibility for the investigation, the recognition and the control of this infection rests on the department of public health. The committee recommends that the conclusions reached by the Committee on Ophthalmia Neonatorum of the American Medical Association be approved by the American Public Health Association, and that whenever practicable the health officer of a state or territory be urged to confer with the committee appointed by the American Medical Association and to inaugurate such measures through the state and its counties for the enlightenment of the people and the control of this disease as may in their judgment seem advisable.

The recommendations of the Committee on Ophthalmia Neonatorum of the American Medical Association are:

1. To secure the enactment of laws in each state or federal territory requiring the registry of births and placing the supervisory control and licensure of midwives in the boards of health, requiring that all midwives be examined and registered in each county, and that they be required immediately to report each case of ophthalmia occurring under their ministrations under penalty for neglect if found guilty, of fine, and for a subsequent offense, forfeiture of license.

2. The distribution by health boards through bulletins and otherwise of circulars of advice to midwives and mothers giving instructions as to the dangers, methods of infection and prophylaxis of *ophthalmia neonatorum.*

3. The preparation and distribution by the health boards of ampules or other receptacles containing the chosen prophylactic with specific directions for its use. It is advised that the choice of the prophylactic be determined by the health officer with the advice of the committee representing the obstetricians and ophthalmologists for that state from the American Medical Association.

4. To insist on the maintenance of proper records in all maternity institutions and other hospitals in which children are born, of the number of cases of ophthalmia neonatorum, with the method of treatment and the results. These reports, which should include all cases of scarred cornea as well as of blindness, should be filed at regular intervals with the department of public health, and the records published.

5. Periodical report to boards of health by all physicians engaged in obstetrics of the number of cases of ophthalmia neonatorum that have occurred in their practice within a specified time, whether or not a prophylactic was used, and if so, what, together with the result.

DISCUSSION.

Dr. Gardner T. Swarts, Providence, R. I.: Inasmuch as ophthalmia neonatorum is a communicable disease, the proper health authorities and health associations should take cognizance of that fact and endeavor to combat this disease as they do other communicable affections. In Rhode Island there is a law requiring that if inflammation of the eye or eyes occurs in a child the first five days after birth a physician or health authority shall be sent for to take charge of the case. It is the duty of health officers, if they find that this disease is prevalent, to notify physicians of that fact, and particularly the younger practitioners. As the disease is a preventable one, such prophylactic measures as suggested by Dr. Lewis should be carried out.

Dr. F. F. Wesbrook, Minneapolis: It should be a comparatively easy matter to convince the provincial or state authorities that money expended in providing for printing, postage, nitrate of silver, argyrol, or some other drug, is more than saved in the cost of providing for the education, housing and maintenance of blind people. In Minnesota it would probably save in the State Hospital for the Blind more than it would cost to carry out the recommendations of this committee.

Dr. Charles F. Fagan, Victoria, B. C.: For a number of years I have devoted my entire attention to health matters, and am ashamed to say that I have entirely neglected my duty on this question. In the future I shall endeavor to keep this subject before medical and health authorities, so that they will take action, and shall certainly take up this question in my own district.

Dr. William Henry Guilfoy, New York City: Steps have been taken by the New York City Department of Health in prosecuting successfully some of the midwives who have been accused of not reporting cases of sore eyes among very young infants. It has been found necessary to go further, and at the last session of the legislature a bill was passed which gives the New York City Department of Health complete power over registration and the practice of midwifery, and in consequence certain rules have been formulated, a violation of which is a misdemeanor and punishable by fine and imprisonment. Very soon it is hoped that the way will be clear to have about 1,500 midwives under constant supervision.

Dr. John N. Hurty, Indianapolis: All those who are engaged in public health work should fully appreciate the importance of this report and its recommendations. While progress has been made in this regard, still it will be a long time before the legal authorities take hold of the matter in the right way and it will be a long time before the people will become interested in that which concerns them so deeply. It is strange that the people themselves are so indifferent in regard to such an important matter as the prevention of blindness.

Vaccinating with Humanized Lymph.

Dr. Francisco de P. Bernaldez, Mexico, described the methods adopted by the vaccination department of the Supreme Board of Health of Mexico, with the most satisfactory results:

The region in which the vaccine is to be inserted, whether on the arm or on the leg, is carefully washed with sterilized water, soap and a brush, rubbing with the latter until the skin becomes red, and is then dried with sterilized cotton. The inoculation is done with lancets that have previously been dipped in boiling water or passed through the flame of an alcohol lamp. The pustules of the child from whom the vaccine is drawn are cleansed exclusively with sterilized water and cotton, are very superficially scarified, and not used if they bleed. A small quantity is taken up on the lancet and the inoculation made by means of small punctures, almost joining each other, and from six to eight in number. In making these punctures the lancet leaves the lymph spread over the place where the punctures have been made. These should not reach beyond the dermic layer of the skin, because that is where the lymphatic network is found abundant and fine. Moreover, this is the way to prevent the vaccine pustules from bleeding. The object in making the punctures in the form above described is to produce pustules in a series, so that the collection of the lymph will be facilitated, because there will be only one scar and not several. The pustules may be numerous and the vaccination is not painful. The advantages of this method over others that have been described are that it does not cause any pain, does not give rise to any flow of blood, facilitates the collection of the lymph, and the pustules can easily be examined to find whether they present the characteristics of true vaccination. If other methods are employed, or the skin is scratched, the pustules can not present those characteristics, and the operator remains in doubt as to whether the individual has obtained immunity or not.

Prevention of Smallpox.

Dr. James Roberts, Hamilton, Ont., described an outbreak of this disease which comprised some eighty cases, the handling of which cost the municipality of Hamilton approximately $10,000.

The feature which appeared more striking than any other in this outbreak was the precision with which, in family after family, the disease singled out the unprotected for attack. After careful scrutiny of the personal history of each patient previous to this illness no evidence was found to prove that in more than one or two instances vaccination had ever been performed. Practically all the patients were without the semblance of a scar. More thorough investigation and closer inquiry into the causes of disease furnished more convincing evidence in favor of contact infection as the chief factor in the spread of this as well as the other exanthemata, notwithstanding all that has been said and written on aerial transmission. If the enforcement of the vaccination act is entrusted by law to the sanitary authorities alone, with the necessary legislation adequately to protect them in the discharge of their duty, the great bulk of the people of Canada would be found as willing to have the law carried out as are the people of Germany. On the practicing physician devolves the great and serious responsibility of seeing that the performance of vaccination for contract prices among school children and among the industrial population in large cities is carried out in such a scrupulous and conscientious manner as in no wise to bring discredit or reproach on the twenty years of quiet and painstaking investigation which gave to the world the greatest discovery known for the preservation of the human species.

DISCUSSION.

Dr. W. F. Elgin, Glenolden, Pa., referred to the effect of heat on vaccine.

Taking virus from the same animal and subjecting it to various temperatures and noting the results, it was found that a temperature exposure of 60° C. killed the vaccine matter in five minutes. When the vaccine is kept at the temperature of the body, and is carried by physicians in their pockets for three days, it has little or no effect. At a temperature of 25° C., or ordinary room temperature, vaccine will last for a week; at a temperature of 15° C. it will last from three to six months, and if kept below the freezing point, minus ten to fifteen degrees, it has been kept for four years, and was good at the end of that time.

Dr. F. M. Smersh, Owatonna, Minn.: In order to have a successful vaccination, the arm, the towel and the vaccine must be aseptic. In a great many instances people who have been vaccinated infect themselves through carelessness. In many cases they put a dirty rag around the sore.

Dr. Alton S. Fell, Trenton, N. J., referred to the methods of quarantine in cases of smallpox:

Prior to seven years ago I had not seen a case of smallpox. In December, 1901, the disease broke out in the city of Trenton, and the president of the board of health, who had had some experience with smallpox, insisted that, no matter what the stage of the disease, every one should be taken to the Isolation Hospital and isolated for a period of eighteen days. This worked much harm, and later such rigid isolation measures were not enforced, but the results were equally as good.

Dr. William A. Evans, Chicago: There is a growth of antivaccination sentiment in this country which is founded on the prevailing principles of American law. In addition, it is founded on a growing diminution in the virulence of the disease, due largely to the fact that men protected are modifying the causative agency of smallpox just as the causative agency of smallpox, in turn, modifies man. Some organization should prepare a refutation of the arguments advanced by antivaccinationists, and this refutation should be given the official endorsement of the organization responsible for its preparation. No organization is better prepared to do this work than the American Public Health Association.

Dr. Evans moved that a committee be appointed to prepare an argument as to the efficacy of vaccination, that the association devise some means for the dissemination of that report, and that some effort be made toward a simultaneous and concerted movement throughout the country in opposition to the antivaccination sentiment.

This motion was carried, and a committee of seven is to be appointed by the President.

Dr. L. Laberge, Montreal: In 1885 there was a serious epidemic of smallpox in Montreal—10,000 cases in eleven months. Physicians struggled with this epidemic, using vaccination and isolation. Since then they have tried to have a compulsory vaccination act in the city, but have not been able to obtain it. They have, however, an ordinance which holds the employer and the superintendent of schools responsible. They have now power to vaccinate, and since that time vaccination has been very efficacious. They have no hesitation in isolating a case from the first hour of making the diagnosis.

President's Address.

Dr. Richard H. Lewis, Raleigh, N. C., pointed out the difficulties in the way of establishing a national department of public health in the United States by the dual nature of the government and the distribution of constitutional powers:

It is unquestionably to the interest of the general cause that each state should look after its own health work, acting always in a spirit of cordial cooperation with the great national bureau, which spirit the latter should be careful to foster and encourage in every way, not only to its own interests, but those of the whole country. It would not be at all difficult so to conduct the national bureau as to have the state boards look to it as both guide and friend. In a general way the kind of national bureau of health we ought to have, and the kind most desirable, is one including within its scope and management all the specific health agencies of the government now in existence, with the addition of others when needed, so thoroughly manned by the best men in their respective departments, and so richly endowed with funds that work of the highest class in demonstrating the principles underlying all subjects bearing on the public health can be done. Having by the study of the work of others and by original research settled on the correct principles of sanitation, it should make a practical application of them to the actual every-day problems of preventive medicine in the sanitary management of the District of Columbia and the territories over which the United States has absolute control. It should give a clinical demonstration of the best methods as carried out by its own thoroughly educated and trained health officers. But it is as a source of information and education that we find the chief value of the bureau. First, in the education of its own officials and the health officers of the country; second, of the medical profession, and, third, of the people. In a bill now pending in Congress further enlarging the powers and duties of the Public Health and Marine-Hospital Service, authority is given for the establishment of a school of hygiene for the training, free of charge, of such health officers as may choose to attend. The granting of a certificate is allowed, but it should go further and grant the degree of Doctor of Public Health, as is done in England. In this way we might hope for the gradual development of a sanitary profession of equal dignity with that of medicine or the other regular professions.

Typhoid in the Province of Manitoba.

Drs. R. M. Simpson and A. J. Douglas, Winnipeg, in a joint paper on this subject, directed their attention in particular to Winnipeg:

Winnipeg is separated, for the purposes of this article, into two parts, north and south; in the south district, where nearly all houses were furnished with improvements, 549 cases of typhoid were found in the years 1903-4-5. In the north district where box closets dotted the landscape at frequent intervals, during the same period there occurred 1,983 cases. Particularly striking was the fact that as soon as the evenings began to grow cold in August, and the flies were driven indoors, the typhoid rate rose, and when the first hard frosts of winter set in, and the snow fell early in November, a diminution at once took place. Box closets offered every possible facility for flies to act as infection carriers, the excreta being above ground and accessible, and the light not excluded. It was a common thing not only to see flies swarming in these places, but also to see abundant evidence of their actually breeding in them. It was a frequent occurrence to visit houses and find two or three typhoid patients being cared for in one room where the cooking was done and food kept, the individual who was doing the cooking usually acting as nurse as well. Drastic regulations were undertaken. No patient with typhoid was allowed to remain at home unless the conditions were such that proper isolation should be obtained, and that excreta could be handled in a manner precluding the chance of infecting others. Rigid disinfection of the premises was carried out in all cases. The use of metal garbage receptacles was insisted on, also that manure should be kept in covered boxes and removed frequently and regularly to avoid affording breeding-places for flies. The provincial Board of Health and the local health department distributed literature on typhoid prophylaxis and on the care of cases. Circulars were issued instructing people to screen their houses and to keep down the number of flies by the use of fly paper and other means. Milkmen were instructed as to what their duties were. Careful supervision was exercised over the water supply, and a large number of public and private wells have been closed. Low lots were drained or filled in, rubbish heaps were burned or destroyed, lanes paved or graded, many insanitary premises were closed altogether, and work along these lines is still going on. Last year some results from their efforts were evident, and from indications the present year will exhibit an even more satisfactory showing, as up to the present they have had only 160 cases, which is considerably less than last year's total at the same time.

Epidemiology of Typhoid Fever.

Dr. H. W. Hill, Minneapolis: In former times typhoid could be attributed to flies. Contact and fly contamination are the great causes of the spread of the disease.

Dr. John F. Anderson, Washington, D. C.: Flies are a fruitful source of infection, and milk is also a source of contamination, due to the lack of proper washing of the cans and other causes.

Dr. Henry Albert, Iowa City, exhibited a table showing the epidemics that have taken place through the carriage of bacilli from infected places, the period of infection extending over several years before the disease made itself known.

An interesting case was reported early in the present year from Germany, in which 32 cases of typhoid fever developed among a population of 130. In one case, for fifty-two years a woman had been a carrier of typhoid bacilli, and was the cause of an epidemic that prevailed last year. She was the keeper of a hotel. Women and children are the greatest carriers of the disease. One in every five hundred adults who have never had typhoid are chronic carriers. It is impossible to state how long the bacilli carriers act as such, but it is certain that there are as many carriers as there are cases of the disease. Many cases are to be traced to the gall bladder. In a few years there will be sufficient knowledge to prevent the carriage of the disease, and one of the greatest preventives will be vaccination.

Typhoid Fever in Richmond, Va., with Certain Conclusions Relating to Typhoid Fever in the South.

Dr. Ernest C. Levy and Dr. Allen W. Freeman, Richmond, in a joint contribution on this subject, pointed out the importance of prompt reporting of all cases of typhoid fever by the physician in attendance:

Freer use should be made by physicians of the laboratory aids to diagnosis which are now furnished gratis by all progressive city and state boards of health. There should be immediate inspection of every reported case, the securing of full information and the study of the data so obtained, with the view of determining the origin of the case. Instruction should be given to the members of the household, at the time of this visit, in the elementary points in the epidemiology of the disease, and printed directions should be left covering the same points. The sewerage system should be extended so that dry closets may be entirely abolished. Pending this, rigid rules should be enforced governing the construction and maintenance of dry closets in those sections which are forced to rely on this primitive means of disposal of excreta. When a good public water supply is available, all wells in the city should be closed, and the supply extended to reach all the people. There should be thorough dairy inspection, and the rigid enforcement of a rule requiring every dairyman, under penalty of revocation of his permit, to report immediately any case of illness among the members of his household, as well as among his employés and their families. There should also be prompt investigation of such reports by the health department, and the temporary shutting off of the milk wherever a typhoid case that can not be perfectly isolated is found. Disinfection of excreta should be rigidly supervised in all typhoid cases, and disinfectants supplied gratis by the health department in indigent cases. The campaign against flies must be carried on, including the limiting of their breeding places and the screening of all typhoid cases, on the one hand, and living rooms, dining rooms and kitchens, on the other. Supervision must be instituted over "carrier" cases, although just how this can be done legally and efficiently is at present an unsettled problem. Education of the public and the medical profession by lectures and literature in the main points of typhoid prophylaxis, especially in regard to the hygiene of the sick room and the danger of carrier cases, are important points. If the greater part of southern typhoid is of the residual type, the above measures, in the light of present information, constitute the chief means of lowering the typhoid death rate in the South generally.

Commercial Pasteurization of Milk.

Mr. B. R. Rickards and Mr. W. M. Campbell, Boston: A large amount of milk is pasteurized in Boston every day. Some of the milk of one contractor is pasteurized in the country and is again pasteurized in the city. It is evident that the larger part of the milk now pasteurized is before pasteurization above the limit established by the Board of Health of Boston, 500,000 bacteria to a cubic centimeter. Some of this milk is of high bacterial content. Bacteria will increase much faster in pasteurized than in unpasteurized milk. Souring bacteria are killed out quicker by pasteurization than other forms. The tendency, therefore, is for such milk to remain uncurdled much longer than unpasteurized milk, the milk thus having a chance to putrify. The pasteurization of milk affects the microscopic estimate of bacteria and leucocytes. In conclusion: (1) The commercial pasteurization of milk without restriction puts a premium on dirty milk, since dirty and old milk, otherwise unsalable, can then be put on the market.

(2) Pasteurized milk may well mean cooked dirt, cooked dung and cooked bacterial products and the laboratory is powerless to detect it.

(3) The commercial pasteurization as at present practiced in Boston probably would destroy all disease-producing organisms, with the possible exception of the bacilli of tuberculosis. The latter would probably be killed in the majority of instances. One machine only out of the three tested would be likely always to destroy the latter. The toxins produced by these and by the putrefactive organisms in dirty milk would undoubtedly escape unharmed and in many cases be capable of producing severe intestinal disturbances, especially in babies.

(4) A false sense of security is undoubtedly conveyed by the term pasteurized milk. The lack of security may come from either improper pasteurization, the pasteurization of improperly handled milk or improper care of pasteurized milk.

(5) The unrestricted pasteurization of improperly kept, old or dirty milk should be prevented by regulations or ordinances prohibiting the pasteurization of milk containing over a certain specified number of bacteria to the cubic centimeter, the bacterial limit being set with due regard to local conditions, especially the distance from which the milk comes. Such regulation should be coupled, of course, with a regulation forbidding the sale of milk above the bacterial limit established

(6) The law should require that milk heated above 140° F. should be marked heated or pasteurized milk. Pasteurized milk should not be sold as fresh milk. The pasteurization of milk in itself is probably not a harmful process and is to a certain extent a necessity under modern conditions in large cities, but commercial pasteurization should be carried on only under the most stringent supervision.

Result of Reincubation and Reinoculation of Atypical Diphtheria Cultures.

Mr. B. R. Rickards, Mr. F. H. Slack and Mr. B. L. Arms, Boston, presented the results of reincubation and reinoculation of 242 atypical cultures:

In many instances a final result may be obtained by these means and a report sent to the physician before the result can be obtained from a secondary culture. Of 242 such cultures, 120 proved either from these or subsequent cultures to be positive; 82 proved to be negative; no subsequent cultures were received on the other 40, although requested. Of the positive cases, reincubation was positive and reinoculation negative in 20 instances. Reincubation was negative and reinoculation positive in 16 instances. Both were positive in 43 instances. Both were negative in 41 instances, the subsequent culture being positive. The results tend to show that the diagnostician who reports positive or negative only is liable to be in error in about 50 per cent. of those cultures which contain atypical forms only. It is preferable in such cases to report "suspicious organisms present," request another culture, and do further work with the culture already obtained. In many instances positive results were obtained from such cultures after from five to seven hours' additional incubation.

Report of Committee on Standard Methods for the Diagnosis of Rabies.

The committee gave a summary of its knowledge in regard to the diagnosis of rabies. In consideration of the fact that there are still many unsettled questions in regard to this subject, the committee recommends as a working method to use in diagnosing rabies the following:

1. Removal of central nervous system and of salivary glands under aseptic conditions.

2. Smears or impression slips made from ammon's horn, fixed in neutralized methyl alcohol, and stained over the flame until steamed, with the following solution:

Methylene blue, sat. alc. sol............	30 c.c.
Fuchsin, sat. alc. sol....................	5 c.c.
Distilled water	300 c.c.

(To be kept in ice-box until used.)

If typical Negri bodies are demonstrated, the diagnosis of rabies can be made; if they are not found, similar slides should be made from the gray matter: (1) of the cerebellum, (2) of the cerebral cortex (motor areas), (3) of the gray matter from other areas. At least six slides should be made, covering a wide area of gray matter in order to exclude the possibilities of localization of definite Negri bodies. If no Negri bodies or suspicious forms are found in any of the slides, and the examined material is fresh, the diagnosis is probably not rabies. If suspicious forms are found in fresh material, rabies is probable. If no definite forms are found in decomposing brains, the diagnosis, doubtful, must be given. In all cases in which the diagnosis is uncertain, animals must be inoculated with a fine emulsion made from material taken from various parts of the brain and pieces from surrounding parts should be prepared for sections. Pieces should also be taken from the Gasserian and several spinal ganglia for demonstrating the presence of the rabies tubercles as well as of the Negri bodies. Two rabbits or four guinea-pigs should be used for the inoculations, which may be either subdural or intracerebral. The inoculated animals should be kept under observation for at least three months before a negative diagnosis is made. An emulsion from different parts of the brain should be made in sterilized neutral glycerin for later inoculations, if, for any reason, the first should be unsatisfactory. Decomposed brains should be allowed to remain in the glycerin for from one to three weeks before inoculation, unless very weak solutions are used. In the latter case, negative results will necessitate another inoculation.

Committee on Standard Methods of Chemical Analysis for Water and Sewage.

The committee (Earle B. Phelps, Robert S. Weston, Edward Bartow, A. Elliot Kimberly, L. P. Kinnicutt) has been at work collecting information looking to a revision of the present standard methods. A circular letter has been sent out to water chemists and others. The present standard methods are in wide use and no very important changes are suggested. Some additional matter is needed, particularly in the case of mineral analysis of water and of the analysis of alum and other materials used in water and sewage treatment. The committee has planned a comparative study of all alternative methods and modifications, which will be undertaken by the various laboratories volunteering. The final form which the various methods shall assume will be determined by the results of the proposed study. Changes are proposed in the following determinations, some of the changes being only in minor points: Turbidity, free ammonia, organic nitrogen, nitrates, copper, hardness. Additional methods are planned as follows: Complete mineral analysis, manganese, free chlorin, alum and other commercial products.

Stability and Putrescibility in Sewage Filter Effluents.

MR. EARLE B. PHELPS, Boston: The development of the modern rapid sewage filter has given a somewhat altered conception of the function of sewage disposal in general, and the rapid introduction of such filters has necessitated changes in schemes of sewage analysis and their interpretation. The most important result of all this is that we look now for qualitative changes rather than quantitative removal. The putrescibility test has become a most important one, especially as regards arriving at a definition which will be acceptable to all, and outlining a method or methods of determining putrescibility which will harmonize with that definition, and a method of expressing results so that they shall have quantitative significance. Putrescibility must mean ultimately the availability of the material as a bacterial food. To avoid confusion and confliction of the present conceptions with various past uses of the term, the word stability would better represent the thing sought after in sewage purification. Stability is not an absolute characteristic to be recorded as plus or minus, but a relative and quantitative property of organic matter, which requires quantitative treatment. The methylene blue or similar test might be adopted as a standard test. It combines great simplicity with quantitative accuracy, a combination possessed by no other test. A method of recording results should be utilized by which the time required to decolorize methylene blue can be properly weighted to give a stability factor which would be an accurate index of the quality of the effluent.

State Control of Public Water Supplies.

DR. C. O. PROBST, Columbus, Ohio: If a polluted public water supply concerns only the community that uses it there might be some argument in favor of home rule, although in this case it will be more properly home misrule. The state has become, in a large measure, one community and it must assume increased responsibility for the conditions which threaten the lives and health of the people. It should be the duty of the state to protect from pollution, so far as possible, all sources of water supplies of which use is being made. The question coming up in all populous states is: Can the streams and watersheds that must furnish public water supplies be kept free from contamination by laws and inspection? This may be possible for some of the states, but not for the great middle west territory, where usually municipal and industrial wastes must go to the streams. Should these wastes be purified in all cases in which the stream is used in any part of its course as a public water supply, or should water purification be depended on for protection? We can not settle this problem for all communities in general terms. Each community affords a problem of its own.

Means to Promote the Health of School Children.

DR. M. L. PRICE, Baltimore: School education is important. The first education of the child should be to save itself from death. Teachers should carefully instruct the children in methods of hygiene. There should also be medical inspection of the schools. Children are subject to many diseases and should not be allowed to exchange food or clothing or any article of personal use.

DR. SAMUEL G. DIXON, Ardmore, Pa., strongly urged the vaccination of children before entering school and said that all schools should have a regular medical inspection and regular disinfection.

Several other papers were read bearing on public health matters.

Model Registration Law Wanted.

The following resolution was adopted:

Resolved, That the draft of a model law for the registration of births and deaths in the United States, based on the essential requirements of registration, as laid down by the American Public Health Association in conjunction with the United States Bureau of the Census, and approved by the American Medical Association and by the Conference of Commissioners on Uniform State Laws, be *cordially* endorsed by the American Public Health Association; and that the Committee on Legislation of the Section on Vital Statistics be authorized to cooperate on behalf of this association with the representatives of the other organizations named, and with the Bureau of the Census in making such minor changes as may be necessary and in urging the adoption of such legislation in non-registration states.

U. S. Public Health and Marine-Hospital Service.

The following resolution, offered by Dr. John N. Hurty, Indianapolis, was unanimously adopted:

Resolved, By the American Public Health Association, That it heartily recommends to the American Congress the passage of such legislation as is intended to enlarge the scope and increase the efficiency of the Public Health and Marine-Hospital Service. To this end the association believes the powers of the service should be increased; that provisions shall be made for the retirement under pay of the members of the service, and that the salaries of the said members should be made commensurate with the medical services of the Army.

The secretary shall send a copy of this resolution to the chairman of the House Committee on Interstate and Foreign Commerce, and to the corresponding committee in the Senate.

Election of Officers.

The following officers were elected for the ensuing year: President, Dr. Gardner T. Swarts, Providence, R. I.; first vice-president, Dr. R. M. Simpson, Winnipeg, Manitoba; second vice-president, Dr. Jesus Chico, Mexico City; third vice-president, Major Charles F. Mason, U. S. Army, Washington, D. C.; secretary, Dr. Charles O. Probst, Columbus, Ohio; treasurer, Dr. Frank W. Wright, New Haven, Conn.

Section on Vital Statistics: Chairman, Dr. Charles A. Hodgetts, Toronto, Ont.; vice-chairman, Dr. William H. Guilfoy, New York; secretary, Dr. W. R. Batt, Harrisburg, Pa.

Section on Municipal Health Officers: Chairman, Dr. William C. Woodward, Washington, D. C.; vice-chairman, Dr. A. J. Douglas, Winnipeg, Manitoba; secretary, Dr. E. C. Levy, Richmond, Va.; recorder, Dr. C. V. Chapin, Providence, R. I.

Laboratory Section: Chairman, Dr. J. J. Kinyoun, Washington, D. C.; vice-chairman, Dr. William Royal Stokes, Baltimore; secretary, Mr. B. R. Rickards, Boston; recorder, Dr. H. D. Pease, Albany, N. Y.

Richmond, Va., was selected as the next meeting place.

Medicolegal

Rights to Damages Where Mother and Unborn Child Are Injured.

The Supreme Court of New Hampshire says that in the case of Prescott vs. Robinson, the question was presented as to whether the plaintiff was entitled to recover damages for her mental distress due to her fear or apprehension before the birth of a child that it would be deformed in consequence of the defendant's negligent act, and whether her mental suffering since the birth of the child and her prospective anxiety and disappointment on account of its deformity and diseased condition could be considered by the jury as recoverable elements of damage. She alleged that the defendant negligently ran an automobile into a carriage in which she was riding, hurling her to the ground, whereby she was severely injured in and on her head, body, abdomen, back and limbs, and internally so that the child to which she later gave birth, and of which she was at the time of said injury pregnant, was born deformed, disfigured and diseased, etc.

Assuming that she suffered mental distress, not only in regard to the effect of the accident on her person but in regard to its effect on the unborn child, it could not be doubted that it was proximately caused by the alleged negligence of the defendant. It was a natural result reasonably to be apprehended under the circumstances. The fact that the defendant was ignorant of her condition did not lessen his liability for the natural consequences of his negligent act.

It was contended that, while the plaintiff might be entitled to recover for distress of mind due simply to her fear of the results of the accident to her person, her apprehension that the child might be deformed thereby was too remote or fanciful to be deemed in law an element of damage, although proximately caused by the defendant's negligent act. But if a fetus is deemed to constitute a part of the mother's person, an injury to it is plainly an injury to her, as much as an injury to her hand or arm would be. And it would seem to follow that she has as much right not to be harmed in the one respect as in the other. A denial of that proposition would be equivalent to an assertion that the law protects persons in the use and enjoyment of some parts of their physical organisms but not of all parts thereof. Such a conclusion rests on no logical basis and is supported by no legal principle. If in consequence of a blow inflicted on his person a man sustains an injury which may reasonably be expected to produce a deformity or to impair his health, his right to recover damages of the negligent defendant for his mental suffering occasioned by the prospect of such a result is a recognized and enforceable right.

The fact that one of the results of the alleged injury in this case was the deformity of the fetus, which became the child's misfortune on its birth, did not prove that no right of the plaintiff was invaded in this regard for which damages were allowable. On the contrary, it showed that her natural right to the normal action of her physical organs in the growth and development of the fetus was seriously infringed. Her ability to be delivered of a normal and healthy child was jeopardized, and her grief and apprehension before the birth on account of what the probable or not unreasonable effect would be on the child was not a remote consequence of the alleged negligence of the defendant. It was her right to produce a healthy child, and if by the defendant's negligence her enjoyment of that right was diminished or violated, her mental distress for the unnatural result to be expected was an element of damage for which she should be compensated, as well as her disappointment at the birth of a deformed child.

In this view of the case it was unnecessary to consider or determine what, if any, rights a child in *ventre sa mere* has for injuries received by it, which may render its existence after birth painful and burdensome. Whether it may or may not, after birth, maintain an action on that account, was immaterial in this case.

The mother's right to the damages she suffers for the defendant's wrongful act in causing her to bring forth a misshapen and sickly child, instead of a well developed and healthy one, does not depend on the question whether at the time of the injury the fetus is deemed in law a person, or whether after birth it may maintain an action to recover for the wrong to it before its birth. She can not recover in her own right for the child's injuries for which, if it were deemed a person in law, it would have a right of action; and, if it is deemed not to be a person at the time of the injury, but *pars viscerum matris*, she suffers no damage for its deformity merely, that is, the fact alone that it is deformed is a misfortune to the child for which she is not entitled to damages, unless it causes her special physical pain and suffering. Such damages pertain to the child alone. The mother is no more entitled to them than the father is. On the birth of the child the physical consequences of the injury to it become effective. From the time of the injury to the time of the birth the mother suffers no physical damage merely because the child's limbs are distorted or because its health is impaired. It therefore follows that the child alone suffers damage on that account; and if that damage is held to be *damnum absque injuria* (that kind of damage for which no action will lie), the mother's right thereto would not be increased. If the child can not recover therefor, it does not follow that she can. In fact, there is no legal connection between their rights of action for their respective damages. But while the injuries suffered by each are distinct and independent, the mother's anxiety before the birth of the child in view of the reasonable probability that the defendant's act will cause her to produce an abnormal child, is peculiarly an element of damage to her.

This result is not in conflict with the cases in which it has been held that no recovery could be had by the mother for the miscarriage and death of a child. These cases do not decide that the mother's solicitude consequent on the injury and before the birth is not an element of her damage, but that the death of the child and her loss of the comfort and enjoyment of the company of a living child are too remote consequences to be considered by a jury in assessing her damages. But injured feelings and regret before the birth and while the mother is seeking to perform her function of childbearing through the organs of her body may be proper elements of recoverable damage, for the same reason, substantially, as led to the holding that solicitude occasioned by the bite of a dog, including the apprehension of hydrophobia although the dog was the holding that solicitude occasioned by the bite of a dog, in consideration of the jury.

The fact that the plaintiff would undoubtedly suffer great disappointment during her lifetime occasioned by her continual observation of her child's deformity and its probable suffering, though in some sense caused by the defendant's negligence, was a misfortune for which the law could afford no compensation in an action for negligence. If the collision which caused the injury both to her and her child had occurred while she was carrying the child in her arms, it would be a novel proposition to urge that she might recover damages for her subsequent mental distress on account of the disfigurement and ill health of the child. However severe the grief may be of the friends and relatives of the victim of a catastrophe, they can ordinarily maintain no common law action for damages on that account. The deformity of a crippled child and its suffering may be an ever present cause of disappointment to its parents and their lives may be miserable thereby, but they can obtain no redress on that ground against the person whose negligence was the cause of the child's condition. The policy of the law requires that no action be maintainable for that cause.

If in the case at bar the fact was that the defendant maliciously inflicted the injury on the plaintiff, one of the natural and intended results of the act would be to cause the plaintiff great mental distress, not merely on account of the injury to her and the unborn child, but on account of her parental anxiety for the future healthfulness of her child. It might not be incorrect to say that it would be conclusively presumed that the defendant's purpose was to inflict on her the mental suffering she sustained, and hence that he ought to pay for it. But if the act causing the injury was merely a negligent act, the recovery of compensation for such remote, secondary, and speculative injuries could not be justified on that ground, since a negligent defendant is answerable only for the direct, proximate, and natural results of his act. If a negligent defendant inflicts a violent blow on the person of the plaintiff, in consequence of which the latter falls on another, who is crippled thereby, the sorrow of the plaintiff for the suffering of the third party could not be considered a proximate result of the defendant's involuntary act, for which he should be charged in damages. As the child's suffering in this case was his misfortune, the plaintiff's regret on that account was not a legitimate element of her damage for the mere negligence of the defendant.

It was not necessary to discuss at length the claim that the plaintiff was entitled to recover for the "pain and suffering and inability to labor of said child," for the obvious reason that the child's peculiar injuries afforded it, if anybody, a right of action; and if it should be held, on consideration, that it could not maintain an action for the damages suffered by it after its birth, it was not apparent how a right of action therefor would become vested in the mother.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

August 29.

1 Plague: Mode of Dissemination and Methods for Control. J. C. Perry, Ancon, C. Z.
2 *Simplification of the Jakoby-Solms Ricin Method for Pepsin Determination. M. Einhorn, New York.
3 Tuberculosis Other than Pulmonary Treated with Tuberculin. G. R. Pogue, Greeley, Colo.
4 Early Diagnosis of Carcinoma of the Sigmoid. E. M. Foote, New York.
5 *Painful Cutaneous Zones in Visceral Disease. M. D. Bloomfield, Philadelphia.
6 Four Cases of Perforating Ulcers of the Alimentary Canal. H. B. Delatour, Brooklyn, N. Y.

2. **Pepsin Determination.**—Einhorn describes in detail his simplification of the Jakoby-Solms ricin method for the determination of pepsin. By the aid of his special apparatus, which is fully described and illustrated, he is able to carry out this test in half an hour instead of three hours. The apparatus consists of a cylindrical glass, surrounded by a vacuum. This glass tube contains a frame holding twelve graduated pepsin tubes. The whole apparatus can be filled with water and corked. Each pepsin tube is marked with a different letter and shows a mark at 2 c.c., 3 c.c., and 3.5 c.c. The lower part is graduated into millimeters. His technic is as follows: Fill each pepsin tube up to 2 c.c. with 1 per cent. ricin solution, then add up to the 3 c.c. mark filtered and diluted stomach contents, and finally add decinormal hydrochloric acid solution up to 3.5 c.c. The tube is well corked, shaken up thoroughly, and then placed in the frame. The letters on the tubes identify the various dilutions. The vacuum tube is filled with fairly hot water (50 to 60 C.), the frame with the pepsin tubes is placed in it, then the apparatus is corked and allowed to stand for half an hour. Observations are taken of the time at which the deposits in the various tubes disappear and are noted. After thirty minutes the amount of precipitate left in any of the tubes is recorded. In making the test the dilutions of 10, 20, 40 and 100 are most serviceable. Normally, the precipitate disappears in a dilution of 10 or 20. If a precipitate is present at 10 the pepsin is diminished; if it disappears at 40 the pepsin is increased. In achylia or marked subacidity the filtrate is used undiluted or only slightly diluted (from two to five times).

5. **Painful Cutaneous Zones in Visceral Diseases.**—Bloomfield expresses surprise that such an important subject as this has received so little attention. He asserts that visceral diseases cause pain referred to definite cutaneous areas, distinct for each organ affected, and in which tenderness exists. He quotes Head, of London, to the effect that these areas correspond to the farthest fibers of certain posterior spinal nerve roots. By mapping out the tender area it is possible to ascertain from which portion of the spinal cord the affected viscus receives its sensory nerve supply. The reflexes are always exaggerated over the hyperalgesic zone. Bloomfield describes the method of examining a patient in order to elicit these signs. On the right side the hyperesthetic area over McBurney's point indicates appendicitis. Hyperalgesia of the umbilical zone accompanies inflammation of the lower surface of the diaphragm affecting the pleura or peritoneum. In acute visceral disease the zones of tenderness are easily elicited, less so in chronic disease. Bloomfield records eight cases as examples of these hyperestheic areas, and tabulates the zones in ninety-three patients.

New York Medical Journal.

August 29.

7 *Treatment of Tuberculosis by Administration of Mercury. B. L. Wright, U. S. Navy.
8 Beard's Theory in the Crucible of Test. J. W. Weinstein, New York.
9 Properly Constructed Filtering Beds. P. F. Bussman, Buffalo, N. Y.
10 Open Air Treatment. J. Carling, New York.
11 Hernia of Tube and Ovary, Complicated by Strangulation of Intestine. C. F. Kivlin, Troy, N. Y.
12 Case of Actinomycosis of the Pelvis. F. McMorrow, Syracuse, N. Y.

7. **Mercury in Tuberculosis.**—This article constitutes a supplementary report on the treatment of tuberculosis by administration of mercury described by Wright in the *United States Naval Medical Bulletin*, April, 1908, and abstracted in THE JOURNAL, July 4, page 75. Since the previous report the percentage of improvements has risen to 85, thirty-four patients being improved. Sixty-five patients are now being treated, and Wright believes that from present indications the percentage of improvement will equal if not surpass that obtained from the forty cases already reported. A few of the patients have moderately advanced lesions, but the majority are well or far advanced in the disease. He reports the cases in detail and describes his method of administration of mercury practically as follows: An injection is given every second day until thirty injections have been given. Then potassium iodid is given for two weeks—0.64 grams three times a day. After this one week is allowed to elapse without any medication; then the injections are resumed. This method is giving Wright satisfactory results.

Boston Medical and Surgical Journal.

August 27.

13 The Psychopathic Hospital and Psychiatric and Neurologic Wards. P. C. Knapp, Boston.
14 Present Status of Sanatorium Treatment for Tuberculosis. V. Bowditch, Boston.
15 Gastromyxorrhea. J. Friedenwald, Baltimore.
16 Renal Insufficiency: Importance of Its Early Recognition. G. M. Randall, Lowell, Mass.

Archives of Internal Medicine, Chicago.

August.

17 Systemic Blastomycosis. Its Etiologic, Pathologic and Clinical Features; Relation of Blastomycosis to Coccidioidal Granuloma. F. H. Montgomery and O. S. Ormsby, Chicago.
18 *Blood Pressure in One Hundred Cases of Tuberculosis at High Altitude. L. S. Peters, Silver City, N. Mexico.
19 *Serum Diagnosis of Syphilitic Diseases. E. E. Mayer and F. Proescher, Pittsburg, Pa.
20 Acute Insufficiency of the Suprarenals. R. S. Lavenson, Philadelphia.
21 Comparative Morphology of the Spirochetes of Syphilis and Yaws (Framboesia Tropica). F. F. Russell, Washington, D. C.
22 Theory of Chemical Correlation as Applied to the Pathology of the Kidney. R. M. Pierce, Albany, N. Y.

18. **Blood Pressure in Tuberculosis at High Altitudes.**—Peters bases his article on observations made in the New Mexico Cottage Sanitarium, which is at an altitude of 6,000 feet, and states his belief that altitude has an important effect on blood pressure. As he shows in tables, the average pressure is far higher than at lower elevations or at sea level; and this holds true even in patients in an advanced stage of the disease. The pressure was taken with a Janeway sphygmomanometer, with the cuff applied to the left arm above the elbow, the patient sitting with the forearm flexed on a level with the heart. The systolic pressure alone was recorded, as Peters believes that for all practical purposes this is sufficient. The observations were made between 9 and 10 a. m. Pressures were taken at different hours throughout the day, but only slight variations in the readings were noted. He took into consideration pulse, hemoglobin, previous infections, use of alcohol, age, sex, temperature, heart lesions and kidney disease. He did not take into consideration venereal disease in women. The estimation of hemoglobin was made with a von Fleischl instrument. The average was practically normal; he states that at that altitude and in that climate anemia is a comparatively insignificant factor. He believes that in hemorrhage the blood pressure is usually low. "If it were true that during hemorrhage the blood pressure is higher than usual, it would be interesting to determine why it is that, in a high altitude, with attending high blood pressure, hemorrhage should be a very infrequent manifestation of tuberculosis." One or two hemorrhages a year, in an institution with from fifty to sixty patients, could not be called a high percentage. While he admits that 100 cases is too small a number on which to base radical conclusions, he believes that this increase in blood pressure on coming into a high altitude may bear a direct relation to the possibility of the alleviation or cure of pulmonary tuberculosis. From these observations he draws the following conclusions:

> 1. Altitude has an important influence on blood pressure. The average pressure is higher here (Silver City) than at lower altitudes or at sea level.

2. There is little if any relation between blood pressure and pulse rate. The same holds true for hemoglobin.
3. Gonorrhea, syphilis, pneumonia, diphtheria and typhoid have no influence on blood pressure.
4. *Alcohol has no effect on blood pressure.*
5. Blood pressure increases with advancing age.
6. The blood pressure in the female is a little lower than that in the male.
7. Apparently the higher the temperature, the lower the blood pressure.
8. A complicating nephritis tends to increase blood pressure.
9. The degree of involvement and the blood pressure bear no necessary relation to each other. The pressure tends to increase as the pulmonary condition improves.
10. *The blood pressure is increased in pulmonary hemorrhage.*
11. The blood pressure in tuberculosis is far more reliable as a prognostic than as a diagnostic sign.

19. **Serum Reaction to Syphilis.**—Mayer and Proescher discuss the importance of this reaction. They followed the technic of Wassermann and Sachs and Altmann, which is as follows: From 4 to 5 c.c. of blood was obtained by venesection, from 0.5 to 1 c.c. of serum being enough for from 4 to 5 tubes with decreasing quantities of antigen. As antigen they employed a freshly prepared 1 per cent. solution of sodium oleate in 0.85 per cent. sodium chlorid solution. This substance, in itself hemolytic, is inhibited by blood serum in proper proportions (Noguchi and Liebermann), and as Sachs and Altmann have showed, it prevents the hemolytic action of the complement. The anticomplement action of the blood serum plays no part in these experiments.

The difference between the inhibition of soap hemolysis by syphilitic and normal serum is slight, Sachs and Altmann found it so and Mayer and Proescher confirm their findings. The best amboceptor is the serum of a rabbit injected with calf's blood and rendered inactive by heating to 56 C., this is known to hemolyze sheep's blood. Three injections of from 50 to 80 c.c. of calf's blood intraperitoneally suffice in from two to three weeks to furnish a sufficiently strong hemolytic serum. From two to two and one-half amboceptor units are sufficient. It is necessary to value accurately the hemolytic amboceptors used. The sheep's blood is washed several times with normal salt solution. To activate the amboceptor fresh guinea-pig serum is used. The complement can be kept for about a week if 1 per cent. sodium chlorid is added and then frozen. To carry out the reaction 0.6, 0.5, 0.4, 0.3, 0.25, 0.2, 0.1 c.c. of sodium oleate solution is employed (using tubes containing about 10 c.c.) and 1 c.c. of a 1 to 10 solution of guinea-pig serum and 1 c.c. of serum to be examined heated to 56 C. This is allowed to stand for one hour at 37 C. to bind the complement, then 0.5 of amboceptor thinned out to a 1:200 solution is added (from 2 to 3 amboceptor units) and 1 c.c. of 5 per cent. sheep's blood (normal salt solution). Each tube is filled to 5 c.c. with normal salt solution. The tubes are then kept at 37 C. in the thermostat and hemolysis observed for about two hours. They tabulate the results in a number of cases. Of 31 cases 12 were diagnosed clinically as paresis. 10 of these gave a positive reaction, 2 were negative. Two cases of tabes gave a positive reaction. In three other patients lues might have been suspected but they reacted negatively. Thirteen other cases were either positive or suspicious of lues, and three of these were negative. Thirty-one absolutely non-syphilitic patients were selected from the wards of the Allegheny General Hospital and all were negative. The authors state that although results differ somewhat most observers agree in accepting the value of this reaction when positive. When the result is negative, however, it can not be accepted as *indicating* anything. The fact that the results in tabes and dementia are so positive indicates strongly, they assert, that these diseases must be taken from the category of metasyphilitic and parasyphilitic diseases and be grouped positively as diseases of luetic origin, and more than this as diseases in which there is still an active agent at work.

Bulletin Johns Hopkins Hospital, Baltimore.

July

23 International Congress on Tuberculosis. President Roosevelt.
24 Recent Visit to Some of the Medical Laboratories Abroad. W. L. Moss, Baltimore.
25 Further Note on Mrs. Packard. W. R. Dunton, Towson, Md.
26 *Obstetrical Significance of the Blood Pressure and Its Relation to the Work of the Heart. J. M. Slemons and F. C. Goldsborough, Baltimore.
27 The Barred Road to Anatomy. H. A. Kelly, Baltimore.
28 Variations in the Calcium Content of the Blood Following Therapeutic Measures. J. R. Boggs, Baltimore.

26. **The Blood Pressure and Obstetrics.**—Slemons and Goldsborough have made observations on ten normal pregnant women, five primigravidæ and five multigravidæ, noting simultaneously the pulse rate with the estimation of the blood pressures from which it is possible to determine an index for the volume of the blood put out by the heart per minute and finally an index of *the work of the heart*. They state that the average of this index in all their patients was 418,000 during pregnancy and 267,000 during the puerperium. The hearts of multiparæ invariably do less work in the puerperium than in pregnancy—the average of the authors' observations showing a difference of nearly 50 per cent. Among the primiparæ it is the rule to find the heart work in pregnancy in excess of that in the puerperium though the contrast is less marked—the difference being only about 10 per cent. The greater cardiac work in pregnancy than in the puerperium is referable to two factors, namely, a relatively more vigorous systole and a relatively more frequent pulse rate. Whether one or the other of these factors is always predominant, the authors' material is not large enough to determine. This point, as well as the primary cause for each of these phenomena, remains for further research.

A predominance of greater cardiac work among multigravidæ would be expected since the first born children are commonly not so heavy as their successors, and one would suppose that a more active circulation would predispose to larger children. That there is some connection between the heart work and the child's weight is borne out not only by the fact that the babies of multiparæ in the authors' series have a larger average weight than those of the primiparæ but also by the finding that larger children were born to those primiparous women who presented the larger work indices. They did not, however, find the variations in this index corresponding absolutely with the variations in the weights of the children. Nor would this be expected, since many factors other than the growth of the child enter into the requirements for work made on the heart. The early part of labor shows no greater values for the work index that existed in pregnancy save a slight temporary rise with each uterine contraction. With the advent of the second stage the heart is subjected to a heavier strain than formerly, both during and between the pains. This continues, in not a few cases, into the first few hours of the puerperium and in general is recovered from much more promptly by multiparous women than by those who have just passed through their first confinement.

Yale Medical Journal, New Haven, Conn.

July

29 *The Call to Public Health. W. T. Sedgwick, Boston.
30 *Case of Varicose Epigastric Veins Following Phlebitis. J. F. Lane, New Haven, Conn.
31 *Medical Aspects of Hernia in the *Linea Alba*. G. Blumer, New Haven, Conn.

29. **The Call to Public Health.**—Sedgwick says that the call for public health is not merely a call for individual welfare, it is also one of the primal social duties. He discusses it from the humanitarian, the moral and the economic sides, and says that the call to leadership in the public health service is a call to the educated everywhere but especially to educated physicians. He eulogizes the services of the Army and Navy medical departments to the cause of public health and particularly the brilliant achievements of the United States Public Health and Marine-Hospital Service. The relation of the physician, he says, to the public is rapidly changing. He will soon have to be as proficient in the art of prevention as in that of healing. While he will not have to build water works, sewerage or other sanitary systems, to be an analyst of foods or a bacteriologist, save perhaps occasionally to boards of health, he will have to fulfill the *ancient and honorable function* of the medical man and remain the trusted and intimate medical adviser of individuals and of families in sickness and in health, and more important still he will have to prevent disease among individuals, families and communities by urging higher standards of living, by teaching temperance in all things, by advocating pure water, pure milk, pure food, pure *living*. *If* it is in him to be an investigator and a leader, he will be one or both of

these things. If not he will be a frank and honest, but not captious critic; he will mold and reform if he can not lead, public opinion.

30. **Varicose Epigastric Veins.**—Lane describes a case in which on the left anterior side of the trunk, two dilated veins stand out prominently. One vein, the superficial thoracico-epigastric vein, starting from the groin and running along the outer border of the trunk to the axilla, connects the femoral vein with the axillary. The other, running near the center of the trunk from the groin to the end of the sternum, starts as the superficial epigastric and above the umbilicus anastomoses with the superficial median xiphoid vein, which empties into the transverse anastomotic or prexiphoid. This last vein connects the two internal mammaries.

31. **Hernia in the Linea Alba.**—Blumer describes a form of hernia recognized for over a century, but not generally noted by the profession, which begins as a rule in the median line at some point between the ensiform cartilage and the umbilicus, much more rarely between the umbilicus and the pubes. It has *been described as* gastrocele. It is not to be confounded with the ordinary umbilical hernia or with the visceral protrusions associated with diastasis of the recti muscles following childbirth or ascites. It is *more common than is supposed*. During the last eighteen months Blumer has seen nine cases and has heard of two others. They are said to be four times as frequent as femoral and umbilical hernias, *though they* may occur in infancy it is unusual to find them under 18 or in extreme old age. They are more frequent in males than in females and *among the laboring* classes. The condition does not always arise in the same manner; a few congenital cases are on record. Straining and trauma are the commonest causes. Blumer discusses the *anatomy and symptoms* and quotes his nine cases in abstract. He says: "The radical operation for this form of hernia is so simple and so satisfactory that it is much to be preferred to any other form of treatment when the condition of the patient warrants it. A mere linear incision over the mass with removal of the nodule *of fat*, if it happens to be a properitoneal hernia, or excision of the sac, if it is true hernia, is all that is necessary."

Archives of Ophthalmology, New York

July

32. Case of Septic Thrombosis of the Cavernous Sinus. W. L. Simpson, Memphis, Tenn.
33. *Treatment of Trichiasis. T. H. Butler, Coventry, Eng.
34. Case of Unilateral Congenital Fistula of the Lachrymal Sac. H. H. Tyson, New York.
35. Dacryocystitis Due to Typhoid Bacilli. N. L. Foster, New York.

33. **Treatment of Trichiasis.**—Butler divides trichiasis into three groups: those caused by entropion, those caused by growth of adventitious lashes in a false position, the so-called distichiasis, and, finally, trichiasis caused by a combination of the other two causes. He gives the details of Van Millingen's *operation, which he asserts is the only satisfactory one*, and also describes Walhauer's modification of Jaesche-Arlt operation and of various modifications of some others. He states *that he has never seen a recurrence after the Van Millingen* operation and that in children this operation is the one which should always be selected. For trichiasis of the lower lids he performs Snellen's operation exactly as for the upper lid. If, however, as often happens in young children, the lids are much rolled in, he advises Pann's plastic operation, as it gives good and permanent results with little or no deformity. In cases in which there is much atrophy combined with entropion of the upper lids, Van Millingen's operation must first be performed, followed later by the Cant operation. He states, however, that his patients, so far, have not had patience enough to allow him to do this.

Annals of Ophthalmology, St. Louis, Mo.

July

36. *Abscess in the Zygomatic Fossa. M. L. Foster, New York.
37. New Applantation Ophthalmo-tonometer. E. B. Coburn, New York.
38. Import of Opsonins in the Eye. Z. Nedden, Bonn, Germany.
39. Case Showing Manifest Canal of Cloquet. A. C. Marsch, Hagerstown, Md.
40. Diseases of the Iris and Ciliary Body. M. L. Foster, New York.

36. **Abscess in the Zygomatic Fossa.**—Foster reports an interesting case of this rare condition. The patient, a woman, awoke *one morning* (May 16) with pain in the left cheek and eye, and some swelling of the side of the face and congestion of the eyelid. One physician prescribed but gave no relief. Another, who was called two days later, ordered a linseed meal poultice and later lanced the gum above the carious stump of the left canine tooth, but found no pus. All the teeth on the *affected side were badly decayed* and had given trouble for years. Not until after the final operation was it learned that at this time the patient was unable to open her mouth and that the physician who lanced the gum was *unable to force the jaws* apart far enough to allow him to make the incision as far back as he desired. This important symptom, which might have furnished a clue to the true diagnosis, was not mentioned till comment was made on its absence in the presence of the patient's son. After the incision had been made in the gum poultices were applied, and a day or two later a profuse flow of pus appeared. By this time the swelling and the exophthalmos had become very great and neither was lessened by the discharge of pus. The patient was sent to a hospital and the lower fornix was incised through the conjunctiva, but no pus was found; on the next day, however, there was free discharge from the wound. Although the incision was kept open there was no diminution in the exophthalmos. A week later, under ether anesthesia, the swelling over the stump of the canine tooth was again incised but no pus found. A knife about the size of a Graefe knife was passed between the rectus and oblique muscles and into the posterior part of the orbit in four places, but without finding pus. The antrum was opened near the canine tooth without result. Next day, in spite of profuse discharge of pus from the incision on the nasal and lower side of the eyelid, the exophthalmos did not decrease and vision was rapidly failing. About a month later the lower lid appeared to be very swollen near the outer canthus and an incision at this point evacuated a large amount of pus. A probe was introduced and passed along the margin of the orbit to the nasal bone. Although the discharge from this wound continued to be profuse the exophthalmos persisted. A nasal specialist was consulted and removed part of the turbinate and explored the sinuses, but did not find them affected.

On July 30, under anesthesia, an incision was made along the lower border of the orbit and a sinus resulting from the previous operations was followed to its extremity. Beyond this the periosteum was pressed back and separated from the bone by means of an elevator and a subperiosteal collection of fluid found that extended backward and outward from the inner wall of the orbit. This area of exposed bone was carefully examined for caries or an aperture which might lead to the ethmoid or elsewhere, but *nothing of the sort* was found, and no evidence of a retrobulbar tumor or abscess was detected. On the next day it was found that fully two-thirds of the detached periosteum had become *reattached to the bone* and the patient seemed much relieved. Though no history of syphilis could be obtained, the patient was given potassium iodid. By the end of August she was discharged from the hospital with the sinus still open and leading to a small area of exposed bone. In January next, the patient was again anesthetized and it was found that the sinus *terminated* behind the ramus of the jaw. The cavity was thoroughly irrigated with salt solution, the skin adherent to the bone and tissues of the lid was dissected free and the cavity *packed* with sterile gauze. The symptoms gradually disappeared and in September of that year the patient was completely well. Foster believes that in this case the infection must *have originated* from the carious teeth or from the mucocele of the lachrymal sac, as the zygomatic fossa is so situated that it is almost impossible for infection to reach it from without.

Journal of the Indiana State Medical Association, Fort Wayne.

July

41. The Physician as a Citizen. D. C. Peyton, Jeffersonville.
42. *Intestinal Autointoxication and Its Treatment. J. M. Anders, Philadelphia.
43. Opportunity for Work, Progress and Peace. W. N. Wishard, Indianapolis.
44. Rural and Village Hygiene. D. W. Robertson, Deputy.
45. Pathology and Treatment of Lobar Pneumonia. H. F. Montgomery, South Bend.

42. **Intestinal Autointoxication.**—Anders presents the subject of toxins formed within organized bodies in a broadened aspect. In summarizing the known etiologic factors he would assign conspicuous positions to the following, in the order given: 1, Impaired metabolic processes; 2, errors of diet, or the ingestion of too large a quantity of proteids, and, although less commonly of fats and sugars; 3, constipation; 4, intestinal pathologic states, such as chronic appendicitis, mucous colitis and gastroptosis, with or without coloptosis. From an etiologic standpoint the cases should be subdivided, according to their origin, into gastric and intestinal forms of chronic autointoxication. He quotes Forchheimer's description of the chemical aspect of chronic intestinal autointoxication (*Am. Jour. Med. Sci.*, July, 1907, abstracted in THE JOURNAL, Aug. 3, 1907, p. 443). His personal experience indicates an increase in the elimination of indican in nearly all cases, especially in those showing marked accumulations throughout the colon. It is obvious, he says, that in direct proportion to the renal elimination of indican will be raised the autoprotective power of the human organism. On the other hand, its disappearance from the urine does not impair the protective processes, but points to a subsidence of the putrefactive fermentative changes in the intestine. He discusses the microscopic urinary findings, acetonuria, the nervous phenomena, emphasizing depression, dread, fear, nostalgia, melancholia, delusions, etc., but cautions against the fallacy of making an assured diagnosis of either autotoxic hysteria or neurasthenia without clear and convincing evidences of the presence of the etiologic conditions; for while the influence of intestinal autointoxication is undoubted, most cases of neurasthenia do not bear the stamp of an enterogenous toxicosis. Anders discusses cutaneous symptoms and says that there is no more difficult problem than the positive recognition of chronic intestinal autointoxication. He draws a practical distinction between primary chronic autointoxication of intestinal origin and that form which occurs secondarily to other acute and chronic diseases. The latter variety is more common than the former, and the alimentary autointoxication is sufficiently open to observation. In treatment, he discusses the diet, restriction of which, sometimes to fluids alone, is advisable. The lighter and more digestible albuminoids, milk, eggs, fish, oysters, fowl (except turkey) and game (in season), in moderate quantity, with wholesome fruits, green vegetables, cereals, potatoes, either mashed or baked, and a small amount of fat and sugar, are suitable. In the secondary form, particular attention must be paid to the primary affection. Milk, cocoa and hot water should replace tea and coffee. Alcohol should be used only cautiously—a small amount of acid wine, claret or Rhine, may help nutrition. Antiseptic laxatives, of which calomel is the best, are to be used; also certain of the alkaline saline mineral waters. Irrigation of the colon is useful in intractable forms. Further elimination should be aided by stimulating the sweat glands. The urinary tract is an important route of elimination. Physical exercises are recommended.

Washington Medical Annals.

July.

46 Review of Pathology. E. B. Behrend, Washington.
47 Review of Gynecology. G. B. Miller, Washington.
48 Postoperative Mechanical Ileus. I. S. Stone, Washington.
49 Catalytic Action of Lipase in Relation to Acidosis. P. S. Roy, Washington.
50 *The Syncytium, Its Functions and Relations to the Toxemia of Pregnancy and to Cancer; Probability of a Primal or Universal Antitoxin. G. W. Wood, Washington.
51 Chronic Ulcer of the Duodenum. J. F. Moran, Washington.
52 *Snake Poisoning in the United States. P. Willson, Washington.

50. **The Syncytium.**—Wood discusses the literature of the anatomy, physiology and pathology of the placenta, the toxemia of pregnancy—advancing it as his own opinion that acute yellow atrophy of the liver in pregnancy is due primarily and directly to the digestive action of the syncytial enzymes of the parenchyma of the liver and that the real toxemia of pregnancy is peptone poisoning, due to the presence of a syncytio-peptone in the blood—and the cause of cancer. Of this he says: "To put it tersely, all that is needed to start a cancer is an embryonic cell, some bile, a medium containing elements necessary to its nutrition, and a suitable receptacle." He announces "the discovery of a new law of pathenogenesis" in the following terms: "When an invading or misplaced cell possessing proteolytic, amylolytic or lipolytic enzymes comes into contact with bile in sufficient quantity it takes on new activities, its digestive powers are doubled, and the tissue in which the meeting occurs has its power of resistance lessened to a corresponding degree." He asserts the "peculiar immunity of nursing babes from all contagious diseases and the lightness of the attack when acquired," and suggests the possible presence in the mother's milk of an immunizing substance, probably derived from the antisyncytiotoxin. This, he holds, suggests in turn the possibility of a primal or universal antitoxin. He adds: "The serum from the blood of any healthy pregnant animal—cows excepted, because their enzymes are probably depleted by excessive milking—would be a ready-made antitoxin for many conditions." It should never be used intravenously, but should be injected into the tissues, like diphtheria antitoxin.

52. This article was published in full in the *Archives of Internal Medicine*, June, 1908, and was commented on editorially in THE JOURNAL, July 11, p. 132.

Therapeutic Gazette, Detroit.

July.

53 *Test to Determine the Adaptability of the Donor's Blood to the Receiver's Blood in Transfusion. J. Funke, Philadelphia.
54 Value of Acetone in the Treatment of Inoperable Carcinoma of the Uterus. F. H. Maier, Philadelphia.
55 Treatment of Sarcoma by the Roentgen Rays. P. H. Pfahler, Philadelphia.
56 *Palliative Treatment of Malignant Diseases by the Roentgen Rays. C. L. Leonard, Philadelphia.

53. **Transfusion.**—Funke says that statistical study shows the result in 42 per cent. of the cases transfused to be favorable and in 53.5 per cent. unfavorable. In all probability the last-named figure could be greatly reduced by searching for compatible blood, and he believes that this can readily be done by appropriate preliminary tests. If, on animal experiments, the diluted blood should prove to be beneficial, the danger from embolism would be diminished and the technic of the operation greatly simplified.

56. **Palliative Use of X-Ray in Malignant Disease.**—Leonard says that this agent has a wide field of use in the palliation of malignant disease, but good results can not be expected unless it is vigorously and intelligently employed by those possessing the clinical and technical experience essential to its effective use.

Old Dominion Journal, Richmond, Va.

July.

57 *Syphilis of Bone and Joints. L. B. Wiggs, Richmond.
58 Diseases of the Thyroid. M. Willis, Richmond.
59 Case of Sporadic Trichinosis; Methods of Diagnosis. D. Vanderhoof, Richmond.
60 Rectal Neuralgia. B. R. Tucker, Richmond.
61 Cesarean Section in Eclampsia; Recovery of Mother and Child. M. Tompkins, Richmond.

57. **Syphilis of Bone and Joints.**—Wiggs discusses these conditions in detail under Lancereaux's classification, viz.: (a) inflammatory osteoperistitis, (b) gummy tumor of bone, (c) dry caries, atrophic form. In determining whether or not a particular bone or joint lesion is of specific origin, Wiggs gives the following as a working summary:

1. We must consider carefully the history—venereal sores (no matter how mild), sore throat, skin eruptions, nocturnal pains, etc.
2 Presence of glandular enlargements (epitrochlear, mastoid, femoral).
3. We must remember that obscure cases, in general, and atypical symptom-groups are often due to syphilis.
4. We should make careful examinations of all suspected cases for iritic adhesions, throat and skin scars, etc. Special attention is due to these scars, as an aid in making a *retrospective diagnosis*. They are pigmented, usually, and clear up gradually in from four to eight years. They are apt to be found on the scalp and anterior surfaces of the legs.
5. Nocturnal pains, double deafness without otorrhea, paralysis of single cranial nerves—these all point to a possible luetic condition.
6 Justus' blood test, which consists in quick *transient reduction* of hemoglobin after injection of mercury.
7. Therapeutic test—in obscure cases.

Keeping these facts in mind and depending more on the physical examination than on mere statements of the patient, one can usually arrive at a relatively positive conclusion. Finally, he discusses the treatment.

Colorado Medicine, Denver.

July.

62 *Indirect Injuries of the Optic Nerve. E. W. Stevens, Denver.
63 The Effect of Altitude on Heart Lesions in Children. O. P. Shippey, Saguache.
64 *The Medical Supervision of Schools. J. T. Melvin, Saguache.
65 Plea for Greater Preventive Care During Scarlet Fever. H. W. Rover, Denver.
66 Case of Primary Mastoiditis. C. E. Cooper, Denver.
67 *Tuberculous Seminal Vesiculitis. J. F. McConnell, Colorado Springs.

62. **Injuries of Optic Nerve.**—Stevens reports two cases that seem to corrobate the conclusions of Jameson Evans (*Brit. Med. Jour.*, July 8, 1905), that a special type of incomplete unilateral blindness may result from blows in the region of the external angular process of the frontal bone, the lesion probably being one of limited contusion of the nasal fibers of the optic nerve by *contre-coup*. The ophthalmic artery winding around the nerve on its outer side from below probably protects the nerve on the side away from the blow against the impact with the outer side of the foramen. The treatment is rest, physical and mental, light diet, and aperients for a week or two.

64. **Medical Supervision of Schools.**—Melvin considers medical supervision of schools necessary to train the teachers, to relieve the patients of incapacitating defects, and to supervise the school itself, its light, temperature, ventilation, capacity, desks, seats and blackboard, hours of study and play, etc.

67. **Tuberculous Seminal Vesiculitis.**—McConnell, after discussing this subject and reporting cases, points out the frequency of the involvement of the vesicles by the tuberculous process; that they are sometimes the sites of a primary lesion; that the disease may be unilateral or bilateral; that the gonococcus is influential in preparing the soil for the proliferation and growth of the tubercle bacillus. The interference with the mechanism of ejaculation and the presence of pyuria must also be noted as prominent clinical symptoms. The necessity for accuracy in diagnosis is probably the element that is most striking in the consideration of this subject, since the stripping seances, so effective in dealing with the non-tuberculous varieties, are here sources of considerable danger. The prognosis is exceedingly hopeful in the early case.

Kentucky Medical Journal, Bowling Green.

July.

68 *Tuberculosis of Bone. B. F. VanMeter, Lexington.
69 Present Day Status of Tuberculosis. D. Caldwell, Paducah.
70 Relation of Bovine to Human Tuberculosis. T. S. Lewis, Lexington.
71 The Opsonic Index and Bacterial Vaccines. S. Marks, Lexington.
72 Acute Parenchymatous Nephritis. A. P. Dowden, Eminence.
73 Common [illegible] Diseases of Infancy and Childhood. S. H. [illegible]
74 Managem[illegible] N. H. Rodgers, Salvisa.
75 The Physician and the Laity. J. M. Taylor, Glasgow.
76 Typhoid Fever and Its Treatment. C. T. Riggs, Upton.
77 Cancer of the Rectum. J. H. Rice, Hopkinsville.
78 Gastric Ulcer. E. C. Anderson, Hopkinsville.
79 Preventive Medicine in the Home and School. W. Blair, Glen's Fork.
80 *Device for Prolonged Irrigation and Drainage of Bladder After Prostatectomy. J. S. Chenoweth, Louisville.
81 Use and Abuse of Opium. C. A. Edelen, Louisville.

68.—Abstracted in THE JOURNAL, Nov. 9, 1907, p. 1625.

80. **Prolonged Irrigation of Bladder.**—Chenoweth describes a device for continuous and efficient irrigation and drainage of the bladder without pain or inconvenience after prostatectomy. It consists of two principal parts: 1, the reservoir; 2, the exhaust pump. The reservoir, for which he does not claim originality, consists of a two-gallon glass bottle with an opening at the top and a lateral opening near the bottom. Through the perforated rubber stopper which closes the upper opening pass two glass tubes. The shorter of these tubes is connected by a rubber tube with a short bent glass tube which passes through stopper in lateral opening. This rubber tube has near the lower end a perforation, 3 mm. in diameter, through which the water escapes. The longer tube reaches a level one-half inch above this outlet and serves to admit air to the bottle. Leading from the reservoir is a rubber tube in which is set a glass coil. This tube is provided with a clip or stop-cock. The reservoir is mounted on a movable stand, so that it can be raised or lowered at will. The *modus operandi* is described in detail. The article is illustrated.

St. Louis Medical Review.

July.

82 *Importance of Proper Advice to the Consumptive. O. H. Brown, Mt. Vernon, Mo.
83 Parathyroid Glandules. W. E. Leighton, St. Louis.
84 Treatment of Skin Disease, by the Roentgen Rays. R. H. Boggs, Pittsburg, Pa.
85 Direct Laryngoscopy. R. H. Johnston, Baltimore.

82. **The Consumptive.** Brown reports cases advised on the home treatment of tuberculosis, prior to their admission into the Missouri State Sanatorium. These patients, when first seen, were all going the usual course of a consumptive; none of them was gaining. All began to improve at once, though they did much better later, when place was found for them in the sanatorium. This is due to the fact that at home there is usually no one who can act as a competent nurse to discipline the patient as he should be disciplined. The success of sanatorium treatment is discipline. But because a patient does well at home is no reason for making him feel that there is no use in going to a sanatorium. "There is little use in a patient's being restored to a fairly good state of health unless he is also taught how to retain his health." This, Brown maintains, is the most significant feature of sanatorium treatment.

American Journal of Urology, New York.

July.

86 Symptomatology, Diagnosis and Treatment of Simple Chronic and Tuberculous Prostatitis. C. G. Cumston, Boston.
87 *Recovery in Case of Multiple Fractures of the Pelvis and Femur with Extensive Trauma of One Kidney and Impaction of Pubic Arch in the Bladder. J. F. Menestrina, St. Louis.
88 *Differential Diagnosis Between Complete and Incomplete Ureterovaginal Fistula. E. Jonas, St. Louis.
89 Specimens of Faulty Descent of the Testicle. D. E. Wheeler, Buffalo.
90 Prophylaxis of the Functional Disturbances of the Male Sexual Organs. V. G. Veckl, San Francisco.

87. **Multiple Fractures of Pelvis.**—Menestrina describes a case of multiple fractures of the pelvis and femur with extensive trauma of one kidney and impaction of the pubic arch in the bladder. He suggests that when similar cases are encountered, an *x*-ray examination should be made as early as possible to avoid errors. He adds that when exploratory incision in the linea alba shows an infiltrated condition of structures covering the pelvic peritoneum, even if no crepitus be present, fracture of the innominata should be suspected and if possible the displaced fragments should be molded back to their proper positions. If a distention of the bladder exists by a hematoma and no visible communication is found from the peritoneal site the bladder should be explored by cystoscopy. He warns against making his mistake of omitting examination of the anterior portion of the bladder. Rectal examination may also reveal protruding fragments. Sounding may assist in locating existing conditions, but it must be carefully done lest fresh hemorrhage be started. He advises against trying to do too much at once, for the shock may kill the patient. If renal catheterization after such an injury shows pus later, the affected kidney should be explored without hesitation by a nephrotomy incision. Reclaiming the functional activity of the kidney will certainly be a great reward for the effort. Hemorrhages during and after exploration are best controlled by packing gauze on either side of the kidney. He reiterates: "Do not omit the use of the cystoscope in such a case, as it is indispensable." One with sufficiently small caliber must be used, such as can be used in a child's urethra by enlarging the external meatus, aiding its introduction by chloroform anesthesia. Urinary antiseptics and fluids should be used freely.

88. **Complete and Incomplete Ureterovaginal Fistula.**—Jonas summarizes his remarks as follows: 1. *Leergehen*

(empty contraction) of the ureter is an important point for differential diagnosis between a lateral opening and complete interruption of the continuity of the ureter in ureterovaginal fistula. 2. Operative interference in ureterovaginal fistula where there is only a lateral opening in the ureteral wall is not advisable until there has been a chance for spontaneous healing.

Monthly Cyclopedia and Medical Bulletin, Philadelphia.

July.

91 *Psychotherapy: Its Scope and Limitations. C. K. Mills, Philadelphia.
92 Personal Experience in Psychotherapy Inculcated by Physiologic Analogies. T. A. Williams.
93 Dactylitis Streptococci. J. K. Young, Philadelphia.
94 The Bier Hyperemia. How to Enhance Its Efficiency. C. E. de M. Sajous, Philadelphia.
95 Address to Graduating Class of the Medico Chirurgical College. L. W. Fox, Philadelphia.
96 Scabies. J. V. Shoemaker, Philadelphia.
97 Treatment of Early Cases of Ectopic Pregnancy Before and After Rupture. J. A. McGlinn, Philadelphia, Pa.
98 Alnus Serrulata. J. M. French, Milford, Mass.

91. **Psychotherapy.**—Mills discusses hypnotism, suggestion without hypnosis, educational or reasoning methods, the light shed by psychic medicine on the nature of disease, limitations of psychotherapeutics, and religion and psychotherapy. In regard to the last point, now being much discussed, he says: "I repeat, therefore, that psychotherapy, like medicinal or mechanical or surgical or climatic or any other sort of therapy, belongs to the physician and not to the clergyman; however sincere the latter may be in his idea that it is his duty to invade the province of his medical brother."

Iowa Medical Journal, Des Moines.

July.

99 Study of Pediatrics by the General Practitioner, or Is the Study of Pediatrics Worth the Attention it Gets, and Does It Get the Attention It Deserves? C. F. Wahrer, Ft. Madison.
100 Positive Diagnosis of Incipient Pulmonary Tuberculosis by Roentgen Rays. J. Rudis-Jicinsky, Cedar Rapids.
101 Sulphocarbolates in Typhoid. J. H. Seibert, Bellevue.
102 History of the Iowa State Medical Society and Its Connection with the Iowa State University. A. A. Noyes, Mason City.

Long Island Medical Journal, Brooklyn, N. Y.

July.

103 Inaugural Address—Associated Physicians of Long Island. H. B. Delatour, Brooklyn, N. Y.
104 Scillitin—Its Properties. J. Burke, Manitowoc, Wis.
105 Study of Calculus Lodged in the Ureter: Part II. R. Hazen, Brentwood, L. I.
106 Fracture of the Patella. M. Figueira, Brooklyn, N. Y.
107 What Shall be Brooklyn's Contribution to the Medical Progress of the Twentieth Century? A. C. Jacobson, Brooklyn, N. Y

Archives of Diagnosis, New York.

July.

108 *Relative Value of the Roentgen Rays in Diagnosis of Pulmonary Tuberculosis. R. A. Bolt, Cleveland, Ohio.
109 The Differential Blood Count as an Aid in Diagnosis of Empyema in Children. L. Fischer, New York.
110 I. Case of Pyloric Cancer; Gastrectomy; Gastrojejunostomy—No Evidence of Recurrence After Nearly Two Years, When Ovaries Were Removed for Sarcoma. II. Two Cases of Very Early Cancer About the Pylorus. J. B. Deaver, Philadelphia.
111 *Appendicitis—Extra Significance of Left Side Pain. J. F. Erdmann, New York City.
112 *Pathognomonic Symptom (or Sign) of Appendicitis not Hitherto Described. H. Illoway, New York.
113 Dyspeptic Type of Appendicitis. C. G. Cumston, Boston.
114 *Diagnosis of Multiple Sclerosis. D R. Brower, Chicago.
115 Diagnosis of Tabes and Pseudotabes. P. Zenner, Cincinnati.
116 Case of Muscular Dystrophy Following Acute Poliomyelitis in Infancy. S. D. Ingham, Philadelphia.
117 Diagnosis of Mastoid Disease Without the Presence of the Classical Symptoms. E. L. Meierhof, New York.
118 *Prognosis of Prostatic Obstruction After Operation. F. Cabot, New York.

108. **The Diagnosis of Pulmonary Tuberculosis.**—Bolt discusses the use of the *x*-rays in the diagnosis of incipient pulmonary tuberculosis and also in following up the course of a chronic trouble. He believes the following conclusions are warranted:

> 1. The use of the Roentgen rays in the diagnosis of pulmonary tuberculosis requires of the Roentgenographer a thorough training in technical methods of handling his apparatus and in developing his negatives. His interpretation of results will depend largely on his general medical training, and experience in studying chests by means of fluoroscope and radiograph.
>
> 2. The rays, when rightly used, offer a valuable aid to the already useful methods of physical examination. The latter, however, should never be neglected.
>
> 3. While confirming many times the results of the older methods, the Roentgen rays have a peculiar value in showing more exactly the extent, position, and something of the nature and progress of the process in the lungs. The diagnosis of incipient tuberculosis, even by means of the rays, is often a difficult matter. Some observers claim to have discovered by means of the rays the morbid changes in an apparently sound lung before they could be elicited with auscultation and percussion.
>
> 4. With unilateral limitation of the movements of the diaphragm; darkening at the apices, or even diffuse haziness, with distinct mottling; accentuation of density about the bronchial lymph glands; relative opacity on deep inspiration, and alteration of the normal outline of the heart shadow, we are justified in treating a case as incipient tuberculosis, even if other physical signs are absent. The presence of distinct areas of calcified tubercles, marked peribronchial thickening, infiltration shadows at the apex, and increased transparency of cavities give grounds for definite diagnosis.
>
> 5. In every well-equipped hospital Roentgen-ray examination of the chest should be made a matter of routine procedure, especially in all suspicious and doubtful cases. Radiographic study of chronic cases may also prove advantageous in watching the progress of the lesions.
>
> 6. Finally, no opportunity should be lost to examine postmortem findings of patients who have previously had a Roentgen-ray examination. In this way we may be able to correct faulty interpretations, and thus accumulate data for a more rational diagnosis. This has largely been neglected in the past, but should henceforth receive the earnest attention of all interested in the subject.

111. **Left Side Pain in Appendicitis.**—Erdmann calls attention to the fact that pain present in the lower quadrant, with evident tenderness, pain and resistance in the right quadrant —appendicitis, in other words—and without any marked evidence of abdominal distention, signifies free fluid in the pelvic cavity, varying in character from serous to seropurulent or purulent, although the appendix, and abscess if present, be thoroughly walled off. He does not recall making a failure in this diagnostic factor in a single case.

112. **New Pathognomonic Symptom of Appendicitis.**—Illoway describes a sign which he has come to look on as pathognomonic of appendicitis as follows:

It is elicited in this manner: The patient is placed at full length on the operating table or chair for the purposes of examination. This is made in the usual way, and when all the data have been obtained the patient is told to flex the leg on the thigh and the thigh on the trunk. The physician then asks if the movement, or rather the upward pressure thus made, causes any pain or soreness in the lower portion of the right half of the abdomen, i. e., the appendicular region.

If the answer is "no" or "very little," either the physician flexes the thigh more closely, more forcibly, on the trunk or directs the patient to do so, and again inquires if it causes pain or soreness or increases the pain or soreness. The patient is then told to extend the leg to full length with a quick and rather sudden movement and is asked if this has caused any pain or soreness. If neither of these movements has caused any appreciable pain or soreness, the patient is directed to execute the same movements with the *left leg* and to compare the sensation produced as to whether it is any different from that caused by the right leg or is the same *on* both sides. Illoway has found that invariably (and in a number of instances this has been verified by a subsequent operation) only when appendicitis was present, whether as the primary malady or as a secondary *involvement, did the* flexion of the thigh on the trunk give rise to a feeling of pain or a sensation of soreness deep down (as the patient would say), and even when this was not so marked the *rapid* extension would cause an accentuation of it.

It may happen that the more forcible flexure of the *thigh* on the trunk may cause some slight pain or soreness, but if this is not due to appendicitis there will be no pain or soreness on extension. It is the pain, or even soreness, produced both on flexion and extension—and he lays the greater stress on the extension—that he regards as a positive and unfailing sign of the presence of appendicitis.

114. **Multiple Sclerosis.**—Brower, discussing the diagnosis of multiple sclerosis, says that hysteria is the disease with *which it is most frequently* confounded. The differentiation must be made by the hysterical stigmata, by sensory disturbances, being much more conspicuous in hysteria, and by a careful study of the eye findings. In hysteria the optic nerve is normal; nystagmus, developed by *forced lateral* movements,

is not severe in hysteria; the regular concentric contraction of the field of vision in hysteria does not inconvenience the patient, and is associated with conjunctival anesthesia.

118. **Prognosis of Prostatic Obstruction.**—Cabot analyzes a number of cases of the *postoperative results in prostatic obstruction*. He states that what we want to learn is more about each individual case at time of operation and whether the patient finally regained good urinary control, also whether he was again able to do his share in the world's work. Many patients would better have died at time of operation than have been condemned to constant distress as an after result. It seems to Cabot that before we can gain much value from statistics it should be stated that the patient's wound has healed and that he has been out and about for at least three months from time of operation.

Military Surgeon, Carlisle, Pa.

July

119 German Field Sanitary Regulations. P. F. Straub, U. S. Army.
120 An Improvised Litter on Horseback. L. T. Woodbury, U. S. Army.
121 History of the Typhoid Cases Occurring on Board the U. S. S. Connecticut. P. E. McDonnold, U. S. Army.
122 *Method of Transporting Disabled Soldiers in the Field on a Regulation Litter, Attached to a Saddle Using Only a Mounted Soldier's Equipment.* G. P. Reed, U. S. Army.

August

123 *Treponema Pertenuis (Castellani) of Yaws and Experimental Production of the Disease in Monkeys. P. M. Ashburn and C. F. Craig, U. S. Army.
124 Report of Four Operations on the Stomach. L. L. Williams, U. S. P. H. and M. H. Service.
125 Disabled Foot in the Military Service and Its Diagnosis by the Use of the Skiagraph. G. H. Richardson, U. S. Army.
126 Autointoxication. W. F. Waugh, Chicago.
127 *Improvised Horse Litter for Two Patients.* G. M. VanPoole, U. S. Army.
128 Military Medical Service of Sovereign Order of Knights of Malta in the Austro-Hungarian Army. S. Steiner, Austria.

123.—Essentially the same article by these authors appeared in the *Philippine Journal of Science*, October, 1907, and was abstracted in The Journal, Feb. 29, 1908, p. 728.

Virginia Medical Semi-Monthly, Richmond, Va.

August 7

129 Pernicious Anemia. W. S. Gordon, Richmond.
130 Bier's Hyperemia in Surgery. H. H. Trout, Roanoke, Va.
131 Tetanus—Its Prevention and Treatment. J. H. Underwood, Woodbury, N. J.
132 Electrodiagnosis. F. K. T. Warwick, Richmond.
133 Principles of Surgery. S. McGuire, Richmond.

Annals of Otology, Rhinology and Laryngology, St. Louis.

June

134 Surgery of the Facial Nerve. J. C. Beck, Chicago.
135 Operation for Thrombosis of the Sigmoid Sinus and Internal Jugular Vein of Otitic Origin. F. Allport, Chicago.
136 Treatment of the Infective Labyrinthitis After Fifteen Years' Experience. A. Jansen, Berlin, Germany.
137 Pathology and Bacteriology of Suppurative Diseases of the Temporal Bone. E. de W. Wales, Indianapolis.
138 Operation for Brain Abscess of Otitic Origin. J. A. Stucky, Lexington, Ky.
139 Causation of the Suppuration of the Temporal Bone. W. E. Sauer, St. Louis.
140 Report of Atypical and Typical Cases of Sinus Thrombosis Complicating Mastoiditis. W. R. Dabney, Marietta, Ohio.
141 Diagnosis and Treatment of Suppuration of the Labyrinth. R. B. Canfield, Ann Arbor, Mich.
142 Chondroma and Osteoma in the Faucial Tonsils. L. N. Grosvenor, Chicago.
143 Developmental Absence of the Outer Right Sphenoidal Wall *Occupied by a Vein Communicating Directly with the* Cavernous Sinus. Operative Fatality and Autopsy. F. P. Emerson, Boston.
144 Case in which Deficient Cerebration was a Prominent Symptom in Chronic Purulent Otitis Media. Cure by Radical Mastoid Operation. D. W. Layman, Indianapolis.
145 Treatment of Intumescent Rhinitis by a Submucous Method. H. Horn, San Francisco.

Journal of Outdoor Life, Trudeau, N. Y.

August

146 New Method of Tuberculosis Prevention. L. Veiller, New York.
147 *Choice of Occupation for Tuberculous Convalescents. A. E. Roussel, Philadelphia.
148 Home Treatment of Tuberculosis. C. A. Robertson, Nashville, Tenn.

147. **Occupation for Tuberculous Convalescence.**—Roussel says that the statistics showing the distribution of the farming industries demonstrate that here is a class of work available to every one, and the supplemental work of the school gardens, vacant lots associations and the sanatoria farm colonies proves conclusively that in this direction only can the consumptive find economic relief—first, in that he is independent of everything but meteorologic changes; second, that he may not worry about a market, as the home consumption of his products is a certainty. This alone is a great gain. When we consider the close connection between improper and insufficient food and the disease there seems to be no argument. The allied industries, the rustic crafts, etc., already enumerated should also be borne in mind. He believes that work as a street car conductor or itinerant merchant, peddler, book agent, insurance agent, etc., if in these latter rôles there is not too much walking, could be assumed by such patients with safety and profit. The keynote of this entire subject is outdoor employment, and it is with *the hope that this may be* added to the propaganda against tuberculosis that this essay is written.

Journal of the Arkansas Medical Society, Little Rock.

July

149 The State Board. M. Fink, Helena, Mont.
150 The Necessity of a State Sanitarium *for the Treatment of Tuberculosis.* C. E. Witt, Little Rock.
151 Public Health and Vital Statistics. G. M. D. Cantrell, Little Rock.

West Virginia Medical Journal, Wheeling.

July

152 Annual Address, West Virginia State Medical Association. F. Howell, Clarksburg.
153 Tuberculosis Sanitarium for West Virginia. G. A. MacQueen, Charleston.
154 Piece of Steel in the Eye Seventeen Years. J. L. Dickey, Wheeling.

Northwestern Lancet, Minneapolis.

August 1

155 *Disease of the Cerebral Vessels, with Its Problem in Diagnosis. W. A. Jones, Minneapolis.
156 Tuberculin in Pulmonary Tuberculosis. G. D. Head, Minneapolis.

August 15

157 "Pollinosis" or Hay Fever. F. C. Todd, Minneapolis.
158 Four Cases of Hypernephroma. E. L. Tuohy, Duluth, Minn.
159 Home Treatment of Pulmonary Tuberculosis. J. W. Bell, Minneapolis.
160 Treatment of Exophthalmic Goiter. H. Wiedow, Worthington, Minn.
161 Chronic Infectious Metritis. C. O. Cooley, Madelia, Minn.

155.—This article was published in The Journal, July 18, 1908, p. 179.

Western Medical Review, Omaha, Neb.

July

162 Static Electricity and Its Therapy. F. A. Wells, Kenesaw, Neb.
163 Movable Kidney—When to Operate. A. C. Stokes, Omaha, Neb.
164 Treatment of Eclampsia. C. R. Watson, Sumner, Neb.
165 Adding a Grain of Salt to Professional Ethics. C. L. Alger, Leigh, Neb.

Advanced Therapeutics, New York.

July

166 Roentgen Dermatitis: Its Prevention and Treatment. M. K. Kassabian, Philadelphia.
167 The Climatotherapy of Tuberculosis: Considered on Physical Rather than Bacillary Grounds. C. Denison, Denver, Colo.
168 Cancer and Its Treatment by Cataphoric Sterilization. G. B. Massey, Philadelphia.

Detroit Medical Journal.

July

169 Diagnosis and Treatment of Hemorrhoids. L. J. Hirschman, Detroit.
170 The Use of Plaster of Paris in Surgery. W. E. Blodgett, Detroit.
171 Catgut Prepared with Collargolum and Argyrol. T. R. MacClure, Detroit.
172 Chronic Laryngitis. E. L. Shurly, Detroit.

Journal of Ophthalmology and Oto-Laryngology, Chicago.

July

173 Spontaneous Exenteration of the Mastoid Resulting from Acute Otitis Media. A. H. Andrews, Chicago.

The Providence Medical Journal.

July

174 *Some Sanitary Problems. C. V. Chapin, Providence, R. I.
175 Digestive Disturbances in Infancy Due to *Overfeeding of Fat.* W. H. Jordan, Providence.
176 Two Cases of Edebohls' Operation of Decapsulation of the Kidneys for "Bright's Disease." H. Terry, Providence.

174.—Abstracted in The Journal, July 25, 1908, p. 342.

The Alabama Medical Journal, Birmingham.

July.

177 Goiter. C. H. Mayo, Rochester, Minn.
178 Direct Laryngoscopy, Tracheobronchoscopy and Esophagoscopy. J. H. Abraham, New York.
179 Postpartum Hemorrhage. J. I. Reid, Aldrich, Ala.
180 Pneumococcus Empyema—Résumé of Twenty Operative Cases. J. F. Oechsner, New Orleans.
181 Jaundice and Its Significance. S. Harris, Mobile, Ala
182 Why Should Exact Hygiene be a Negligible Factor in Sick Room? J. D. Haecock, Birmingham.

Atlanta Journal-Record of Medicine.

July.

183 The Physician and His Relation to Society. J. C. Olmsted, Atlanta.
184 Review of the Work on the Appendix. W. Jones, Atlanta.
185 Pyelitis in Pregnancy. F. G. Hodgson, Atlanta.
186 Nervous Disease Caused by Alcoholic and Metallic Poisoning J. C. King, Atlanta.
187 Higher Medical Education. E. R. Anthony, Griffin, Ga.
188 Outdoor Life for the Prevention and Cure of Disease. P Paquin, Asheville, N. C.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London.

August 15.

1 Opium Habit and Morphinism. D. Duckworth.
2 Traumatic Enophthalmos. H. P. Dunn.
3 Case of Kala Azar. D. G. Marshall.
4 Malignant Disease of the Stomach Associated with Malignant Disease of the Glands Above and Behind the Inner Extremity of Each Clavicle. H. Morris.
5 *Observations on the Phagocytosis Occurring in Human Blood Serum when Mixed *in Vitro* with Horse Serum. S. G. Shattock and Leonard Dudgeon.
6 Excision of the Tonsil: Its Operation. H. Upcutt.
7 Treatment of Immature Cataract. H. Smith.
8 Renal Calculi Nephrolithotomy: Subsequent Nephrectomy on Account of Hemorrhage. H. A. Ledlard.
9 Vesical Calculus, the Nucleus of which was a Revolver Bullet. C. F. Lassalle.
10 Treatment of Spina Bifida by Drainage of the Cerebral Subdural Space. P. Paterson.

5. **Phagocytosis.**—Shattock and Dudgeon state that seeing that the administration of normal horse serum either by subcutaneous injection or by the mouth is followed by a rise in the opsonic value of the blood in human beings, it becomes a matter of interest to ascertain how this result is brought about. They consider certain possibilities in the form of the following questions and give in detail the results of their experiments: 1. Does horse serum act simply by supplying "common" or non-specific opsonins directly to the patient's blood? 2. Does horse serum act by supplying agglutinin, which brings about a "precipitation" of the micro-organisms on the leucocytes and so increase the phagocytosis independently of any increase in opsonin? 3. Does horse serum activate normal human serum so as to render the latter of higher opsonic value? 4. Does horse serum activate the serum of a patient suffering from an infective disease so as to render the latter serum of higher opsonic value (a) by simple admixture, (b) by the intermediary action of the patient's cells on the mixture? They conclude that the opsonic value of normal horse serum is decidedly lower than that of normal human serum or than that of patients suffering from chronic pulmonary tuberculosis. There is nothing noteworthy, they state, in the behavior of horse serum as studied by saturation with deopsonizing agents. They found that saturation with either *Staphylococcus pyogenes aureus* or *Bacillus coli communis* considerably reduces the phagocytosis toward both these micro-organisms. Saturation with human red blood has a somewhat similar effect in regard to both of the micro-organisms named. Horse serum does not increase phagocytosis by reason of the agglutinin it contains, as distinguished from its opsonin, for heating the serum to 60 C. (which removes the opsonin but leaves the agglutinin) so markedly reduces the phagocytosis that this possible factor is negligible. The admixture of horse serum to normal human serum *in vitro,* after incubation, does not raise the opsonic value of human, but, on the contrary, reduces it. The admixture of horse serum to a patient suffering from chronic pulmonary tuberculosis does not, after incubation *in vitro*, raise the opsonic value of the tuberculous serum. The admixture of horse serum to the serum of a patient suffering from chronic pulmonary tuberculosis does not, after incubation *in vitro*, and allowing the immune cells to work in the mixture, raise the opsonic value of the tuberculous serum.

British Medical Journal, London.

August 15.

11 *Pyopericardium in Children Under Twelve Years of Age. F. J. Poynton.
12 Pneumonia in Children. G. H. M. Dunlap.
13 *Physiologic Antagonism Between Aconite and Belladonna. H. Speirs.
14 New Apparatus for Chloroform Anesthesia. N. H. Alcock.
15 Zinc Ionization in Chronic Urethritis. P. C. Fenwick.

11. **Pyopericardium in Young Children.**—Poynton declares that fortunately for our reputations this is rather a rare disease, though it is an interesting and difficult clinical one. In young children the condition may occur in a general pyemia as a sequel to a local infection, complicating, for example, suppurative otitis media, osteomyelitis, or septic wounds. In such cases the physician must be prepared to find multiple abscesses in various parts of the body. Under these circumstances, pericarditis is a deadly complication, and although it is well to have made the diagnosis, it is only seldom that any treatment is of use. Poynton discusses at length the symptoms and diagnosis, and states that the most common errors are: 1. Mistaking the half truth for the whole. Suppurative pericarditis may never occur to the physician; he may diagnose empyema, or pneumonia and empyema. If an empyema has been drained, he suspects a loculus or retention of pus. In case of bilateral empyema he may ascribe all the symptoms to that cause. 2. Another pitfall is tuberculosis. This mistake, Poynton asserts, is liable to be made in the case of a marasmic child who has had subacute pneumonia. The failure in recovery, the wasting and breathlessness, together with the signs in the lungs, are ascribed to pulmonary tuberculosis and the consequent toxemia. The most pronounced signs of the pyopericardium he gives as:

> 1. Progressive muffling of the heart sounds synchronous with enlargement of the cardiac area, together with marked percussion dullness over the pericardium and sometimes posteriorly in the interscapular region. Tubular breathing or absent breath sounds may also be noted in the interscapular region.
>
> 2. A rapid and extensive increase of the cardiac dulness upward toward the left clavicle. I have seen a case in which there was absolute dulness reaching to the left clavicle, and the postmortem examination showed that the upper lobe of the left lung was collapsed and pushed backward by the distended pericardial sac.
>
> 3. The pear-shaped outline of a distended pericardium.
>
> 4. The abrupt transition from the dulness of fluid to resonant lung tissue.
>
> 5. A wavy and diffuse pulsation to the left of the sternum.

He is rather pessimistic as to treatment. The prognosis, he states, is exceedingly grave and unless a serum can be obtained which will combat general pneumococcic infections, improvement in methods of diagnosis will not help in treatment. Surgical intervention, he believes, offers the best chance of success, and a certain number of cases of recovery are on record following operation. The best results are to be expected in older children (over 12) in whom there is considerable effusion of liquid pus. Inflammatory changes in the anterior mediastinum and great thickening of the pericardium itself make it difficult to tell when the pericardial cavity has been opened, and it is not surprising that now and again a pericardial cavity has been thought to be opened and a drainage tube introduced into the mediastinal anterior tissues.

13. **Physiologic Antagonism Between Aconite and Belladonna.**—Speirs reports the case of a patient who took by mistake half an ounce of a liniment, composed of chloroform, aconite and belladonna. The patient took 53.3 grains of aconite root, which represents ¼ grain of aconitine of which 1/16 grain has been known to be fatal. He also swallowed 40 minims of fluid extract of belladonna (B. P.), which is equal to 0.3 grain of the total alkaloids. This would represent approximately thirty times the official dose of atropin. Of chloroform he took 40 minims, about eight times the official dose. The interest in the case lies in the fact that the lethal effect of a large dose of aconite was abolished by the simultaneous action of a large dose of belladonna. Muscular weak-

gans almost certainly lose their spermatogenetic powers. 2. The inguinal, pubic and pubo-scrotal organs retain, in from 40 to 50 per cent. of cases, some spermatogenetic power, at any rate up to about the age of 30 or 40, and, so far as one is able to state, the inguinal testicles retain this power longer than the pubic or high pubo-scrotal varieties. In cases of double incomplete descent, therefore, operative measures should be carried out well before the age of puberty, the canal exposed, the testicle delivered, and the hernial protrusion cured. If the cord is fairly long, the testicle should be sewn to the scrotum. In other circumstances it is preferable that the organ should be allowed to remain in the inguinal canal. The usual disadvantages of such testicular position will be experienced, but the patient will, at any rate, have the advantage of possessing some power of reproduction if he marries early.

35. **Puerperal Sepsis.**—Taylor analyzes the literature of major operations that have been performed for puerperal sepsis under three headings: 1, hysterectomy; 2, ligature of pelvic veins for thrombosis; 3, abdominal or vaginal section for puerperal peritonitis.

36. **Pernicious Anemia.**—Taylor discusses the symptoms and condition of the blood in pernicious anemia, and says that the recognition of idiopathic pernicious anemia in any case with obscure symptoms, rests on the following blood changes: Reduction in the number of red corpuscles, with a high color index, and leukopenia; the presence of megalocytes in large numbers, and of normoblasts and megaloblasts; among the white corpuscles, a lymphocytosis, usually of over 40 per cent. and a not greater percentage than 4 of eosinophiles. Lastly, he urges that blood examinations should be undertaken as a part of routine work almost as frequently as examination of the urine.

Archives Générales de Médecine, Paris.

July, LXXXVIII, No. 7, pp. 401-464.

37 Accidents Due to Antiseptics in Surgery. (Accidents dus aux antiseptiques en chirurgie.) S. Mercadé.
38 *Modern Treatment of Gout. (Traitement actuel de la goutte.) L. A. Amblard.
39 Diagnostic Importance of Inequality of the Pupils in General Paralysis. (Inégalité pupillaire dans la paralysie générale.) A. Rodiet.

38. **Treatment of Gout.**—Amblard outlines a course of treatment based on recent research which has apparently demonstrated that uric acid is derived from the xanthin bases and that both these and thymic acid are derived from nucleic acid, and that, normally, the thymic acid keeps the uric acid dissolved. The diet should be regulated to avoid food containing much purins, and he gives Hall's tables showing the percentage in purin of the different articles of food. They show that white meat contains as much or nearly as much purin as dark meat, and that beans and oatmeal also contain large amounts. As high temperature destroys the combinations of thymic acid with the purin bases, by setting them free, it follows that meat too well cooked is less desirable than rare meat. Among the articles allowed are milk, butter and fresh cheese, eggs and a little red meat once a day. Among the few drugs which may be found useful are the salicylates and alkaline drugs. Courses of mineral waters are especially useful, not only for the gouty but for their children, as a preventive measure, with a suitable diet and moderate exercise. He quotes Mathieu to the effect that children inherit from their parents not only an organic predisposition, but their bad habits of general hygiene and eating; they also inherit their fortune, and thus continue to live in the same environment and under the same condition in most cases. He warns that many disturbances formerly attributed to gout are in reality due to latent arteriosclerosis and uremia. Continued traces of albumin in the urine warn of the necessity of preventive measures to arrest the progress of latent arteriosclerosis. It is important, however, to remember that excessively strict directions may cause them to be followed to an exaggerated extent or to be disregarded altogether.

Presse Médicale, Paris.

August 8, XVI, No. 64, pp. 505-550.

40 Remote Results of Appendicectomy in Chronic Appendicitis. A. Broca and F. Barbet.
41 *Dermatitis of Workers on Cement. (La "gale" du ciment.) R. Martial.

41. **Cement Dermatosis.**—Martial has observed a number of cases of a skin affection in men working in cement. Pruritus, swelling and a papulous eruption, with a tendency to lichen and eczema, are the main features. The French call it "cement workers' itch." He advises rubbing lanolin or wax on the hands and forearms before going to work, and keeping the shirt buttoned at the neck. Some firms supply cotton gloves and protecting goggles to their workmen, especially those working in tunnels, etc.

Semaine Médicale, Paris.

August 12, XXVIII, No. 33, pp. 385-396.

42 *Paroxysmal Excessive Secretion of Intestinal Mucus. (L'entéromyxorrhée nerveuse.) L. Cheinisse.

42. **Paroxysmal Excessive Secretion of Intestinal Mucus.**—The Journal, Dec. 7, 1907, page 1961, summarized a case of what Cheinisse calls isolated nervous enteromyxorrhea. He here reviews the literature on the subject and emphasizes the importance of differentiating this purely nervous form, distinguished by the absence of pain and inflammation, the excessive discharge of thin mucus being evidently a nervous phenomenon. The absence or scantiness of formed elements in the discharge is a prominent feature. Treatment should be addressed to the nervous predisposition and the accompanying constipation. In Richartz' case the affection had lasted for three years, but yielded at once to vigorous purging. This left the intestine at rest afterward, and its excitability gradually subsided to normal, hastened by astringent enemas.

Berliner klinische Wochenschrift.

August 10, XLV, No. 32, pp. 1477-1516.

43 *Pathology of Tumors in Cerebellum. (Kleinhirngeschwülste.) M. Martens and W. Seiffer.
44 Localization of Motor Aphasia. N. v. Mayendorf.
45 *Suprasymphyseal Cesarean Section. (Zum suprasymphysären Kaiserschnitt.) L. Blumreich.
46 Schütz's Law of Pepsin Digestion. (Ist das Schütz'sche Gesetz der [illegible] eyer.
47 Unreliability [illegible] with Urine. (Verwendur [illegible] Syphilisreaktion.) F. Hoehne.
48 *Technic of Serum Diagnosis of Syphilis. (Zur Technik der Serodiagnostik der Syphilis.) M. Stern.
49 Microsporon Affection of Scalp. (Mikrosporieerkrankung der behaarten Kopfhaut.) B. Chajes.
50 Dyspnea of Gastric Origin. (Eigenartige Dyspnoe gastrischen Ursprunges.) G. Galli.
51 Occupational Accidents of Telephone Girls. (Betriebsunfälle der *Telephonistinnen.*) *M. Bernhardt.* Commenced in No. 31.

43. **Tumors in the Cerebellum.**—Martens and Seiffer report a case of multiple glioma on the ependyma causing symptoms as from a tumor in the cerebellum. The largest glioma was located in the fourth ventricle and was responsible for the clinical manifestations observed. The patient was a boy of 13, healthy until he had been hit on the head with a stick three months before. There were no appreciable symptoms, but a week later headache developed, so severe that he soon was unable to attend school. Vomiting, vertigo when doing gymnastic exercises, and diplopia were observed, with some exophthalmos. The patient survived only a few hours the operation for removal of the assumed tumor in the cerebellum. This diagnosis was based on the objective findings, which are described in detail, all pointing to an organic affection of the cerebellum. Since Virchow described this ependyma glioma in 1858 scarcely a dozen cases have been reported. A history of trauma is evident in nearly every case. The multiple localization renders the affection inoperable, resembling central neurofibromatosis in this respect.

45. **Suprasymphyseal Cesarean Section.**—Blumreich believes that this new technic is destined to supplant the classical Cesarean section, but he does not approve of it for infected cases. In a case reported he followed the transperitoneal technic, and in this article emphasizes its advantages. It avoids danger of hemorrhage and of injury of urethra or bladder. Complications of the puerperium with thrombosis occur fifty times as frequently with sawing operations on the pelvis as with other deliveries, but nothing of the kind has hitherto been reported in connection with suprasymphyseal Cesarean section. The region of the uterus incised is the least vascular, and the child is delivered and the placenta follows—both along physiologic lines. The patient can get up much earlier than with other technics.

ness, numbness of the extremities and tendency to complete collapse were the only purely aconite symptoms observed Salivation which is usually present in aconite poisoning was absent and the usually contracted pupil was overcome by the action of the atropin Finally, the intensely depressant action of aconite on the central nervous system was counteracted by the stimulating influence of the belladonna Spiers declares that the obvious lesson to be drawn from the case is the great value which should be attached to hypodermic injections of atropin in aconite poisoning

Medical Press and Circular, London

August 12

16 Visual and Ocular Defects Associated with General Disease J Taylor
17 Calmette's Ophthalmo Reaction for Tuberculosis F P Weber
18 *Examination of Sausages and Their Hygienic Preparation W G Savage
19 Artificial Respiration T P C Kirkpatrick

18 **Sausages**—Savage demands the examination of sausages, of which he describes the composition, investigates the bacterial content and considers the hygienic condition of the premises on which they are prepared He urges that the amount of fat, proteids, starch water, etc, may be ample from the standpoint of nutrition but sanitary requirements demand a bacteriologic examination of contents and casings for *Bacterium coli* and other *micro organisms*, a chemical examination for various preservatives and a microscopic examination for added starches He describes the methods of examination for the different substances

Glasgow Medical Journal.

August

20 *Gangrene of the Extremities After Pneumonia A N McGregor
21 *Experimental Investigation into the Function of the Thymus A MacLennan
22 Case of Chorioepithelioma G B Marshall
23 Rare Pelvic Tumor in a Child of Four Years T Kay

20 **Gangrene After Pneumonia**—McGregor reports a case of gangrene of the fingers of the right hand consequent on pneumonia He discusses the subject of pneumonic gangrene closely analyzing the literature and says that the following factors in pneumonia may determine gangrene of the extremities 1 Pneumococci in the blood, probably in all cases and with marked agglutinating power of the blood which increases up to the crisis and then gradually diminishes 2 The weakness due to the acute fever and in particular the cardiac asthenia, which is most marked immediately after the crisis 3 The occurrence of pneumococcic endocarditis even in the earlier stages of pneumonia sometimes resulting in the formation of clots or vegetations which passing into the arterial circulation, become emboli 4 The invasion of the veins by pneumococci causing phlebitis and thrombosis sometimes followed by pulmonary embolism 5 A probably similar invasion of the intima of the arteries resulting in arterial thrombosis 6 Thrombosis f arteries following embolism in which the clot formation extends to some distance and shuts off the collateral circulation

21 **The Thymus**—As the result of an experimental investigation MacLennan arrives at the following conclusions

1 The thymus may be a lymphatic gland but it is so specialized as to be virtually something more it is one of the series of glands which by an internal secretion regulate the various functions of the body

2 The gland is really an accessory one, for its function can be taken up by others Simultaneous extirpation of the spleen and thymus invariably results in death One would infer therefore that along with its other manifold functions the spleen can carry on those of the temporary thymus Extirpation of the thymus does not give rise to hypertrophy of adenoid tissue elsewhere

3 The function of the gland is temporary, for as growth advances the gland atrophies though in man it never quite disappears till after puberty There are cases on record, however in which there has been no thymus

4 The thymus and the thyroid are closely associated developmentally, anatomically, physiologically and pathologically The results of experiments have shown that the thymus is unnecessary to the economy when the thyroid is gone, and when the thymus is removed less thyroid suffices The importance of this relationship is apparent in certain diseases An enlarged thymus is credited, rightly in some cases, with being the cause of death in the so called status lymphaticus, and after removal of the thyroid the enlarged thymus gives rise to the same conditions as produce the so called thymus death Therefore, when thyroidectomy is deemed necessary in exophthalmic goiter MacLennan recommends that the thymus be first sought for, and, if enlarged, removed as a preliminary to the thyroidectomy

5 In certain other diseases notably laryngismus stridulus thymusectomy has given good results The result of the extirpation is not mechanical but due to the removal of the internal secretion of the thymus In this disease thymusectomy offers some hope of cure In cretins, thymusectomy, by reducing the necessity for thyroid secretion, will be beneficial, and ought to be tried

6 In children who present a fulness over the suprasternal notch during expiration, straining or coughing, special care ought to be taken during surgical anesthesia, which ought to be of the lightest possible

Journal of Obstetrics and Gynecology of the British Empire, London.

July

24 *Rupture of the Uterus and Its Treatment J M M Kerr
25 Congenital Umbilical Hernia Successfully Treated by Operation A N McGregor
26 Primary Carcinoma of the Fallopian Tube J E Gemmell
27 Bilateral Tuberculous Salpingitis F J McCann

24 **Rupture of Uterus**—Kerr says that while it is true that rupture of the uterus is ordinarily a disgrace to the obstetric art there are exceptions and it may occur even during pregnancy He discusses rupture during pregnancy and after protracted labor, and then rupture during early labor, which he regards as holding etiologically a middle point between the two others He further discusses the varieties of rupture, symptomatology and diagnosis, and prognosis—which last, he says, is much more favorable to day than when the condition was treated expectantly Finally, he deals with the treatment, both prophylactic and active He especially warns the accoucheur against the danger of performing vaginal operations such as turning, etc, with the woman only partially anesthetized

The Practitioner, London

August

28 Diagnosis of Iliac Swellings W H Battle
29 How to Secure Mental Health and How to Prevent Mental Breakdown R Jones
30 *Surgical Treatment of Incompletely Descended Testis L B Rawling
31 Experiments in the Treatment and Prevention of Infection in Typhoid A K Gordon
32 Review of Recent Work in Gynecology H Playfair
33 Treatment of Trachoma A W Ormond
34 Review of Recent Literature on Diseases of the Nervous System H C Thomson
35 *Major Operations in Treatment of Puerperal Sepsis F F Taylor
36 *Symptoms and Condition of the Blood in Pernicious Anemia J G Taylor

30 **Incompletely Descended Testicle**—Rawling discusses the various operative measures and, with regard to the treatment of a patient with one incompletely descended testis, says that the condition may be watched up to about the seventh year of life, after which operation should be advised in case of failure in scrotal descent After full exposure and division of cremasteric fibers and all restraining bands, and removal of peritoneal process, the operator will be enabled to gauge the possibility of scrotal placement If this is apparently impossible, the organ should be removed, a radical proceeding, no doubt, but one that is apparently indicated by the almost inevitable failure of all palliative measures, and by the absence of any physical or mental alterations in those patients in whom such a course had been adopted With regard to the question of double incomplete descent, double abdominal replacement has been advocated, the hernial protrusion being cured and the canal closed up With this view he does not agree, for two main reasons 1 The abdominally replaced or

48 **Serum Diagnosis of Syphilis**—Stein mentions a few technical points which he has found of importance in his research on 2 500 sera For example, he states that the proportion of complement in the serum of different guinea pigs varies within a wide range He has found it necessary to test the serum in this respect before using it for application of the complement He also remarks that the intensity of the positive reaction is immaterial

Centralblatt f. d Grenzgebiete der Medizin und Chirurgie, Jena.

August 6, IX, No 14 pp 529 560

52 *Surgical Treatment of Pericarditis and Chronic Adhesive Mediastino Pericarditis (Cardiolysis, etc) L Venus Commenced in No 11

52 **Operative Treatment of Pericarditis**—Venus has traced the history of operative treatment of pericarditis back to Riolanus in 1653 He summarizes about 300 articles on the subject, and tabulates the details of 110 cases in which treatment was by puncture alone, 31 by incision without resection of ribs and of 36 by pericardiotomy after resection of ribs—a total of 178 cases of surgical intervention on account of pericarditis He warns that the results can not be estimated by statistics, as the affection is seldom primary Of the total 72, or 40 45 per cent, were cured and 6, or 3 37, were improved Puncture is allowable only when there is no suppuration, which can be determined by an exploratory puncture In case of suppuration, resection of ribs and pericardiotomy only can be considered After pericardiotomy the pericardial cavity should be carefully rinsed with salt solution and extensively drained In case of chronic adhesive mediastino pericarditis Brauer's technic of cardiolysis—osteoplastic resection of the wall of the thorax to release the adherent pericardium—has proved a life saving operation and is evidently destined to play a prominent part in the treatment of this affection The signs of failing compensation subside diuresis is increased, the albumin vanishes from the urine while the ascites grows less and the liver and spleen become smaller Patients who were incapacitated and bedridden were restored to comparative health and could resume their occupations He gives the full details of the 17 cases in which cardiolysis has been performed to date The effect was invariably favorable A complete cure can not, of course be expected from the nature of the affection but by relieving the heart the general health is notably benefited

Deutsche medizinische Wochenschrift, Berlin

August 6 XXXIV No 32, pp 1377 1416

53 Pathology of Urine Concrements (Pathogenese der Urolithiasis) W Ebstein
54 *Recent Research on Experimental Diabetes G Zuelzer, M Dohrn and A Marxer
55 Action of Glutaric Acid on Phloridzin Diabetes (Glutarsaurewirkung auf den Phloridzindiabetes) G G Wilenko
56 Traumatic Paralysis of Cervical Sympathetic (Traumatische Lahmung des Halssympathicus) Siebold
57 Operative Treatment of Perforation of Stomach (Operative Behandlung der M[illegible] Michelsson
58 Steam Cauterization [illegible] and Limitations (Leistungsfahigkei[illegible] der Praxis und ihre Grenzen) L F Schaller
59 Intestinal Parasites Locating Outside of Intestine (Darmparasiten im Korper ausserhalb des Darmes) W Rimpau and W Loewenthal
60 Homogeneous Radiation in Therapeutics (Homogenbestrahlung) F Schultz

54 **Treatment of Diabetes on New Basis**—Zuelzer and his associates have succeeded in demonstrating an antagonistic action between the hormon of the pancreas and the hormon of the adrenalins They describe extensive experimental research which seems to show that the adrenalin plays the active part in the mobilization of the sugar metabolism, both in physiologic conditions and in pancreatic diabetes Among the experiments related on which this assumption is based are some in which normal blood was made to circulate through the surviving kidney inducing a slight increase in sugar When the same procedure was done on the liver of a dog whose pancreas had been removed the sugar increased by from 50 to 70 per cent the increase in sugar was even more pronounced when the liver was from a dog with suprarenal diabetes They assume that in the liver the adrenalin and the hypothetic internal secretion of the pancreas become combined and that their joint action keeps the elimination of sugar within normal bounds In pancreas diabetes the lack of the pancreatic secretion, and thus the predominance of the adrenalin, explain the increase in the sugar They review a number of experiments undertaken by other investigators for other purposes, all of which confirm the possibility of the antagonistic action of pancreas extract and suprarenal substance From these premises they proceeded to use a pancreas extract in treatment of suprarenal diabetes When both the pancreas and the suprarenals are incapable of functioning, no diabetes will follow After pancreatectomy they ligated the veins from the suprarenals, thus shutting them off from the circulation and no diabetes followed Zuelzer has extirpated more than a hundred pancreases, and pronounced glycosuria invariably followed, except in those cases in which the veins from the suprarenals had been ligated All their research tends to prove that adrenalin has physiologically the task of mobilizing the sugar from the liver, and probably also from the other tissues Lepine has recently reported a case of diabetes with sarcoma of the suprarenals The excessive production of the suprarenal secretion was probably responsible for the diabetes In conclusion are given the details of several clinical cases of diabetes in which marked benefit was obtained by injection of a pancreas extract to antagonize the excessive action of the adrenalin In one very severe case the urine was freed from acetone and acetic acid and the sugar was reduced to traces after a single injection of the pancreas preparation The effect lasted for four days, as also in the case of a boy of 6 with 4 8 per cent sugar and large amounts of acetone and acetic acid In another case a woman eliminated from 650 to 850 gm sugar in an average of 18 liters of urine a day. The day after the injection of the pancreas hormon the amount of sugar dropped to 129 gm the next day to 109 gm, and then it gradually returned to its former figure Besides these severe cases others are mentioned in which a daily average of from 20 to 25 gm sugar was reduced to 7 2 the first day, then to 2 gm and then to zero for four days At first they used the pancreas from the slaughter house, that is, after death but they found that this material was too weak They had to use 10 gm to neutralize the action of 1 mg adrenalin, they now obtain the pancreas hormon in a different way, by which 0 2 gm accomplishes the same results The best technic for this production has not yet been worked out, but they are working along lines suggested by Pawlow's biologic research using the living animal at the height of digestion and eliminating the toxic properties by removing the albumin

Medizinische Klinik, Berlin.

August 9 IV, No 32, pp 1219 1256

61 *Training for Obstetrical Practice (Verwohnung und Anpassung in der Geburtshilfe) H Sellheim
62 Physiology and Pathology of the Play of the Pupils (Pupillenspiel) C Hess
63 Lumbar Puncture for Psychiatric Differentiation (Lumbalpunktion in der psychiatrischen Diagnostik) F Chotzen
64 Dietetic and Pharmaceutic Treatment of Epilepsy in Private Practice A Eulenburg
65 *Meat Poisoning (Zur Kasuistik der sogenannten Fleischvergiftungen) L Wachholz
66 *Dietetic and Physical Treatment of Gout (Gicht) M Hirsch
67 Toxin and Antitoxin of Dysentery Bacilli F Schottelius
68 Improved Technic for Romanowsky Blood Stain (Panoptische Universalfarbung fur Blutpraparate) A Pappenheim

61 **Training for Obstetrical Practice**—Sellheim discusses a number of points useful to bear in mind, and urges practical object lessons instead of too much didactic instruction In his clinic (Tubingen) he has some rooms arranged like the bedroom in an ordinary farm house or laborer's cottage Nothing is provided except as the medical student demands it and he is thus trained in the technic of transforming an ordinary bedroom into an aseptic lying in room with provisions for the convenience of the patient and her infant later This supplies conditions such as the young practitioner is most liable to meet and it has the further advantage of giving the woman a separate room for her ordeal The only way to obtain confidence is to have the student conduct the childbirth himself, he says, under the direction of his chief, which has also the best stimulating effect on the rest of the class as spectators

65 **Fish and Meat Poisoning**—Wachholz reports five cases observed last year at Cracow, with autopsy findings In two

cases the meat had been from a cow with anthrax; a man of 45 and his son, 12 years old succumbed in less than three weeks to malignant pustule, but two other persons who ate freely of the meat escaped all disturbances. Anthrax bacilli were found in the blood of the heart, liver, spleen, etc., of the boy. The meat had been condemned and buried by the meat inspectors, but the man had dug up a piece and carried it home to boil. In another case a man died, with vomiting and diarrhea, two days after eating some fish. Autopsy five days later gave negative findings. Another patient was a large landed proprietor taking treatment at the Pasteur Institute, as he had been bitten by his dog, known to be rabid. Ten days later symptoms of fish poisoning developed after a fish dinner at the leading restaurant. He lived only four days. Autopsy findings were negative, as also inoculation of animals, showing that he had escaped hydrophobia.

66. **Treatment of Gout.**—Among the other measures which Husch has found effectual are the Bier hyperemia and hydrotherapy.

Munchener medizinische Wochenschrift.

August 4, LV, No. 31, pp. 1625-1672

69 *Clinical Diagnosis of Pulmonary Arteriosclerosis. A. Posselt.
70 *Modifications in Nervous System After Stovain Anesthesia. W. Spielmeyer.
71 *Artificial Hyperemia of Brain in Incipient Arteriosclerosis. G. Galli.
72 *Results and Prospects of Cytologic Examination of Cerebrospinal Fluid. (Zytologische Untersuchung der Zerebrospinalflussigkeit und deren Aussichten.) O. Rehm.
73 *Carrot Soup in Digestive Disturbances in Infants. (Karotensuppe bei Ernahrungsstorungen der Sauglinge.) E. Moro.
74 Imperfect Absorption of Antitoxin from Rectum. F. Hamburger and R. Monti.
75 Operation for Recurrence of Carcinoma of Uterus. (Rezidivoperation nach Uteruskarzinom.) O. v. Franqué.
76 Diazo Reaction of Normal Urine. (Diazoreaktion des normalen Harns.) R. Engeland.
77 Stomach Disturbances in Masturbators. (Magenstorungen bei Masturbanten.) A. Siegmund.

69. **Clinical Diagnosis of Sclerosis of the Pulmonary Artery.**—Posselt has encountered ten cases of sclerosis of the pulmonary artery during the last fifteen years. In three cases it was an autopsy surprise; in the others a presumptive diagnosis was made, with positive differentiation in one case. The subjective and clinical signs and symptoms are mostly referable to the *obliterating endarteritis of the smaller vessels*, while the physical signs reveal the involvement of the main trunk. A history of severe infection in the past is frequent, especially smallpox, and accompanying aortic sclerosis with insufficiency or mitral stenosis is the rule. Striking cyanosis is an early symptom, while there is little if any dyspnea and edema. Intermittent dyspragia is common, but there seems to be no tendency to drumstick fingers. Another symptom is repeated bleeding from the lungs, without infarcts. There is an area of dulness at the upper left margin of the *sternum and* vicinity, sensitive to pressure and percussion, and the heart dulness extends unusually far toward the right. When these signs accompany primary mitral stenosis pulmonary arteriosclerosis is probable, especially when the diastolic thrill and presystolic murmur gradually move upward toward the pulmonary ostium, and the Roentgen rays give characteristic findings.

70. **Changes in the Nervous System After Stovain Spinal Anesthesia.**—Spielmeyer has had opportunity *to examine the* central nervous system in thirteen cases after spinal anesthesia. The patients succumbed to peritonitis, sepsis or cachexia in from two to eight days after the spinal anesthesia, with the exception of one case, in which the anesthesia was evidently responsible for the fatal outcome, the patient dying in coma forty hours after the injection. The neurohistologic findings in these cases and in considerable experimental research showed degeneration in the motor ganglion cells of the anterior horn of the spinal cord. These motor elements seem to be especially susceptible to the action of stovain. The changes were observed in this class of cells high in the neck as well as low down, and in some the changes seemed to be irreparable. He adds that none of these changes were discovered in the cases in which the dose of 0.07 gm. (0.9 grains) stovain had not been surpassed. In the fatal case 0.12 gm. (1.7 grains) stovain had been injected, paralysis of the respiration was the first sign of trouble.

71. **Induced Hyperemia in Treatment of Cerebral Arteriosclerosis.**—In this communication from Baccelli's clinic at Rome, Galli reports excellent results from the Bier technic in treatment of 20 patients with incipient cerebral arteriosclerosis. His clinical and experimental experience has shown that the application of a constricting band to the neck reduces the pressure in the arteries while it increases that in the veins, and materially improves the conditions of the circulation in the *vasa vasorum. This renders it improbable that the application* can cause a rupture in an artery, although the pulse rate may increase by a few beats. In a number of cases he has obtained remarkable results, the vertigo and signs of mental debility vanished and the patient felt very much better. This treatment is particularly beneficial in that form of incipient arteriosclerosis known as neurasthenia, but which resists all treatment addressed to the latter. He applies the constricting band daily for from half an hour up to two hours.

72. **Cytology of the Cerebrospinal Fluid.**—Rehm has been studying this subject at Kraepelin's clinic and in Nonne's hospital service, with 650 lumbar punctures. The results have convinced him that general medicine can derive as much benefit *from cytologic examination of the cerebrospinal fluid* as from that of the blood, and that the method should not be abandoned to psychiatry and neurology alone. Less than ten cells in the cubic millimeter is the normal range.

73. **Carrot Soup for Sick Infants.**—Moro found that newly born guinea pigs fed on cow's milk succumbed in a few days to acute digestive disturbances as a rule. The syndrome suggested the alimentary intoxication of infants. The symptoms can be arrested if the young are fed with sliced carrots or allowed to suckle the mother. He has applied this experience in treatment of infants suffering from digestive disturbances, and reports excellent results in 48 cases in which the infants were fed on carrot soup. He boils the carrots and passes them through the finest wire sieve, adding about 200 c.c. to one liter of meat broth made from 500 gm. beef and bones. The carrot soup is made fresh each day and represents from 235 to 260 calories to the liter. This supplies nourishment, while it causes complete transformation of the intestinal flora. The French also use an aqueous decoction of several kinds of vegetables, but this lacks the special properties which render the carrot soup so beneficial, as Moro describes in detail.

Therapie der Gegenwart, Berlin

August, XLIX, No. 8, pp. 337-384

78 *Treatment of Neurasthenia. (Neurasthenie-Behandlung.) A. Eulenburg.
79 Artificially Carbonated and Oxygenated Baths in Arteriosclerosis. (Sarasonsche Ozetbader bei Arteriosklerose.) Schnutgen.
80 *Principles of Feeding the Sick. (Grundsatze der Ernahrung fur die Kranken-Kuche.) W. Steinberg.
81 *Improvement of Peripheral Centripetal Neuron in Tabes by Frenkel's Exercise Therapy. (Verbesserung des peripheren zentripetalen Neurons bei Tabes dorsalis durch die Frenkelsche Uebungstherapie.) D. de Vries Reilingh.
82 Stutterers in Business and in Court. (Der No. 51 des D. St. G. B. *und das Stottern.*) *F. Hoepfner.*
83 *Connection Between Diseases. (Krankheitszusammenhange.) F. von den Velden.
84 Modern Views of Regeneration of the Blood and Their Importance for Treatment of Blood Affections. (Blutregeneration und Therapie der Blutkrankheiten.) H. Hirschfeld.
85 Idiosyncrasy to Aspirin. F. Melchior.

78. **Treatment of Neurasthenia.**—Eulenburg's long article emphasizes that the end and aim of treatment of neurasthenia are the restoration of the patient to his normal capacities to enable him to fill his proper place in life. This requires systematic training, increasing and development of latent and reserve energy by methodical education and exercise. Rest and protection from excitation—however indispensable they may be at times—should be only the prelude or a brief episode in the treatment.

80. **Principles of Feeding the Sick.**—Steinberg remarks that the first principle of feeding is that the food must nourish. The subjective side of eating should be studied more, and modern medicine should aim to combine science and art, theory and practice in this domain more than has been the rule hitherto.

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Addresses

CRIMINAL ABORTION IN ITS BROADEST SENSE.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON OBSTETRICS AND DISEASES OF WOMEN, OF THE AMERICAN MEDICAL ASSOCIATION, CHICAGO, 1908.

WALTER B. DORSETT, M.D.
ST. LOUIS.

I wish to express my deepest gratitude to the members of this, one of the most important sections of the American Medical Association, for having chosen me as their chairman. This honor comes to but few of us in a lifetime, and when I was selected I could not but feel that the honor carried with it a great responsibility. In accepting the position, it will probably be remembered, I said: "The success of a year's work would not be accomplished by the chairman but by the work of each individual member."

In looking over the program one must be impressed by the wealth of subjects to be discussed, as well as the names of the authors of the papers. This certainly should convince us that we are to enjoy a treat seldom offered in bodies of this character. Should I attempt to add anything of a scientific nature, I fear it would rather detract from than add to its interest. I have, therefore, concluded to present a subject that concerns us not alone as obstetricians and gynecologists, but as citizens of a great republic—"Criminal Abortion in Its Broadest Sense."

It is high time we should have a heart to heart talk.

The accepted definition of the word "crime" is "a breach of law, whether divine or human." Laws are rules, whether human or divine, for the government of the human race, and are enacted for the good of mankind. While the subject may be viewed from many standpoints, still there is a common ground on which we all must stand in order to view the subject in its composite form. It is reasonable to assume that the infraction of a law should carry with it a penalty; whether that law is human or divine, else it would be useless to enact laws; and no law holds good that does not have attached a penalty, which should be commensurate with the importance of the law. While there is probably no one in this audience who would deny that criminal abortion is fast becoming more and more common, still there may be many who may not be willing to take a decided step toward its suppression. The question may be asked: "Does it concern us as physicians? Does it concern us as members of the American Medical Association and of this section? Does it concern us as citizens of this, our beloved country?"

It is a rule in law that no case can be prosecuted without first obtaining sufficient information from those who possess it. The abdominal surgeon sees almost daily the results of the work of the abortionist, and the obstetrician can not be blind to the practice of the disreputable midwife and the unprincipled doctor. Admitting, then, that these statements are true, who should be concerned in this matter?

Possessing the information that we undoubtedly do, should it not be our duty as citizens, as well as physicians, and members of this important branch of the great American Medical Association, to suggest some means for the suppression of an evil that threatens such an onslaught to our civilization? When I say possessed with the information, I say it advisedly. Each and every member of this section can at this moment relate sad death-bed scenes that fairly make the blood run cold. Beautiful women are robbed of their lives, beautiful babes made orphans, and whole families wrecked, by a conscienceless scoundrel who goes free and unpunished by the law of our land.

It is useless to expect ecclesiastic intervention. The clergy do not seem to be at all concerned. To furnish them with this information is to throw away your time. Few sermons are preached from the pulpit for fear of shocking the delicate feelings of a fashionably dressed congregation, and the begging for money to save the souls of the far away heathen seems of more importance. They can not but realize the enormity of the crime from knowledge gained at the bedside of the victim of the abortionist. Yet they do not possess the moral courage to express their convictions to those to whom they are "called" to minister. Their education along biologic lines has, I am certain, in many cases been sadly neglected.

Young people marrying deliberately agree not to be parents for two or three years. They prefer to enjoy life by getting into and keeping in the social whirl. They may be, and often are, considered good and respectable people—possibly church-going people.

Self-induced abortion, or abortion produced by a fashionable or fad doctor, is, as we know, a fruitful cause of the horrible pus cases in which we are now and then called to operate. This fad doctor is one with a lucrative practice, and is often "the lion" at social functions. He it is who empties the uterus in cases of emesis gravidarum without first racking his precious brain in trying all recognized remedies and methods to check the vomiting. He it is who finds so many cases of contracted pelvis where it is utterly impossible to do anything but an early abortion to save the woman's life. He it is who finds so many cases of retention of menses, that require dilatation and curetment. He it is who finds the urine "loaded with albumin," necessitating an immediate emptying of the uterus to prevent death from Bright's disease. Such men and women prostitute the profession of medicine and should be exposed.

81. Influence of Exercise Therapy on Tabes.—Reilingh reports a case in which the nerve conductibility was much reduced. He found that exercise therapy improved conditions in this respect; he is inclined to attribute the result to training of the peripheral centripetal neuron and presents arguments to sustain this view. Frenkel ascribes the benefit from exercise therapy to re-education of the coordination center, but the findings of the case reported, especially the interval between stimulus and reflex action, speak for a peripheral rather than for a cerebral process.

83. Connection Between Diseases.—This article reviews Riffel's tables showing the mortality in three generations of the entire population of several villages—4.000 souls. They show that a number of diseases which we never think of connecting with each other, in reality have certain relations. This can be better understood when it is seen how they develop on a common soil. The tables show, for instance, that cancer occurred almost exclusively in tuberculous families. The tuberculous families furnish 149 of the 165 pneumonia deaths; 44 of the 48 deaths at childbirth; and 25 of the 28 deaths from heart defects, and 48 of the 50 deaths from meningitis. Apoplexy, typhoid, gout, emphysema and asthma do not accompany tuberculosis, but seem to take its place in the second generation, the tuberculosis reappearing in the third generation.

Zentralblatt für Chirurgie, Leipsic.

August 8, XXXV, No. 32, pp. 961-992.

86 *Reduction of Size of Scar by Application of Iodin. (Jodpinselungen zur Erzielung schmaler Narben.) A. Schanz.

86. Iodin to Reduce Size of Scar.—Schanz has found that the least trace of a scar is observed when a wound, healing aseptically, has a very slight irritation on the surface. Probably this is owing to the hyperemia induced by the slight irritation. He accomplishes this result in an ideal manner by painting the wound with the tincture of iodin the third or fifth day after the operation. A single application is enough for a small wound, on well-nourished parts, but for larger wounds he applies the tincture every day for from two to five days. The edges of the wound under the influence of the iodin stick so close together that they heal without spreading, and the wound leaves no more trace than a needle scratch.

Zentralblatt für Gynäkologie, Leipsic.

August 8, XXXII, No. 32, pp. 1033-1080.

87 *Removal of Bilateral Diseased Adnexa by Transverse Fundal Excision. (Neue Methode der Exstirpation doppelseitig erkrankter Adnexe.) O. Beuttner.
88 The Nongravid Uterus Can Change Its Size in Response to Stimuli which Do Not Act Directly on It. (Der nicht schwangere Uterus kann selbst auf Reize hin, die ihn nicht direkt zu treffen brauchen, sein Volumen wesentlich verändern.) Id.
89 Two Cases of Puerperal Inversion of Uterus. A. Schönbek.
90 *What Can We Learn from After-History of Seven Cases of Reimplantation of the Ovaries? Pankow.
91 Triplet Pregnancy with Special Regard to Site of Placenta. (Drillingsschwangerschaft.) O. Jaeger.
92 Treatment of Abortion. (Zur Anwendung der Abortzange.) Hammerschlag.

87. Fundal Extirpation of Adnexa.—Beuttner regards Faure's technic for removal of the adnexa from within the uterus outward as a great advance, but he has modified Faure's method so as to permit retention of one of the ovaries. He gives an illustrated description of his method, with details of three cases in which he has applied it with fine effect. His method avoids all conflict with the bladder, and sacrifices only so much of the broad ligaments as is absolutely necessary for the removal of the diseased adnexa. After a transverse incision, according to Pfannenstiel, he incises the fundus of the uterus from side to side, cutting out a long oval wedge, extended on each side into the broad ligament to include the tubes and one or both ovaries. This retains Faure's principle of removing the adnexa from within the uterus. It has the still further advantage that wedge resection of the body of the uterus is liable to have a curative influence on chronic metritis and has recently been recommended by Dührssen for this purpose alone.

90. Ultimate Results of Reimplantation of the Ovaries.—Pankow relates the after-history of seven women treated for hemorrhages, dysmenorrhea or osteomalacia by reimplanting the ovaries at another point, two or three years ago. He gives the details of the cases and the histologic findings in some of the ovaries. In one case the ovaries were found functionally and anatomically normal more than three years after the operation. The results on the whole suggest that the ovaries contain two kinds of tissue, as has been demonstrated for the testicles--glandular tissue with an internal secretion, besides the follicular apparatus. He is confident that better results will be attained if it is possible to destroy the latter while leaving unimpaired the tissue in charge of the internal secretion. In two recent cases he has tried to realize this ideal. On account of excessive hemorrhages he removed the ovaries; slit them lengthwise; placed them in physiologic salt solution, and exposed them for ten minutes to a moderately soft Roentgen tube at 25 cm. distance, and then reimplanted them.

Gazzetta degli Ospedali e delle Cliniche, Milan.

August 2, XXIX, No. 92, pp. 969-984.

93 The Dorsal Veins in the Hand as Means of Individual Identification. (Le vene dorsali della mano come indice di identificazione personale.) A. Tamassia.
94 *Differentiation of Exudates from Transudates by Rivalta's Test. (Valore diagnostico della prova di Rivalta.) G. Romanelli.
95 Ocular Tuberculin Reaction. (Oftalmoreazione di Calmette.) A. Plessi and C. Tosatti.
96 Hypertrophy of Mammæ in Exophthalmic Goiter in Man of 52. (Ginecomastia primitiva e secondaria ad alterazioni dei testicoli, tiroide, ipofisi ed organi genitali.) A. Cerioli.

94. See abstract 137 in The Journal, Aug. 22, 1908, page 718.

Policlinico, Rome.

August, XV, Medical Section No. 8, pp. 337-384.

97 Negative Results of Attempts to Induce Experimental Endocarditis with Bacterial Toxins. (Intorno all'esistenza di un'endocardite da tossine batteriche.) F. Pulci. Commenced in No. 7.
98 Leucocytes with Sudan-Staining Granules in Respiratory Affections, Especially Croupous Pneumonia. P Pozilli.
99 Modification of Günzburg Reaction. (Reazione del Günzburg: osservazioni e modificazioni.) M. Barberio.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

TEXT-BOOK OF PHYSIOLOGIC CHEMISTRY. In Thirty Lectures. By Emil Abderhalden, O. Professor Für Physiologie Des Physiologischen Institute Der Tierärztlichen Hochschule Berlin und Universitäts-Professor. [illegible] by William T. Hall, Instructor in Chemistry. [illegible] of Technology, and George Defren. First [illegible] 2. Price, $5.00. New York: John Wiley & [illegible] 1908.

SANATORIA FOR CONSUMPTION AND CERTAIN OTHER ASPECTS OF THE TUBERCULOSIS QUESTION. Supplement in Continuation of the Report of the Medical Officer for 1905-06, to the Thirty-fifth Annual Report of the Local Government Board, 1905-06. Paper. Pp. 670, with Illustrations. Price, $1.25. London: Darling & Son, 1908.

MANUAL OF PSYCHIATRY. By J. Rogues de Fursac, M.D., Formerly Chief of Clinic at the Medical Faculty of Paris. Translated by A. J. Rosanoff, M.D., Second Assistant Physician, Kings Park State Hospital, N. Y. Second Edition. Cloth. Pp. 406. Price, $2.50. New York: John Wiley Sons, 1908.

INDEX OF 1,180 POSTMORTEMS OF THE INSANE. State Hospital for the Insane, Norristown, Pa. By H. J. Sommer, Jr., M.D., Pathologist, Formerly Assistant Physician of the Institution. Cloth. Pp. 316. Norristown: Hospital Printing Office, 1908.

BLUTARMUT UND BLEICHSUCHT. Wesen, Ursachen und Bekämpfung. By Dr. Karl Bernold Martin, leit. Artz des Sanatoriums Lorettoberg, Freiburg i. Br. Paper. Pp. 50. Munich: Verlag der Aerztlichen Rundschau (Otto Gmelin), 1908.

TWENTY-NINTH ANNUAL REPORT OF THE ST. ELIZABETH HOSPITAL, Dayton, Ohio, Under Charge of the Sisters of the Poor of St. Francis. For Year 1907. Paper. Pp. 36. Dayton: Press of the U. B. Publishing House, 1908.

DIE BEHANDLUNG DER STRAFFÄLLIGEN JUGEND. By Dr. Eugen Neter, Kinderarzt in Mannheim. Paper. Pp. 56. Munich: Verlag der Aerztlichen Rundschau (Otto Gmelin), 1908.

NATIONALIZATION OF THE SANITARY SERVICES. By Dr. J. A. Lopez del Valle, Local Chief Sanitary Officer of Havana. Paper. Pp. 127. Published for Free Distribution.

FIFTY-EIGHTH ANNUAL REPORT OF THE PASSAVANT HOSPITAL, Pittsburg, Pa. For the Year 1907. Paper. Pp. 30.

PITTSBURG HOSPITAL REPORT, Sisters of Charity. From Jan. 1, 1905, to Dec. 31, 1907. Paper. Pp. 62.

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Addresses

CRIMINAL ABORTION IN ITS BROADEST SENSE.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON OBSTETRICS AND DISEASES OF WOMEN, OF THE AMERICAN MEDICAL ASSOCIATION, CHICAGO, 1908.

WALTER B. DORSETT, M.D.

ST. LOUIS.

I wish to express my deepest gratitude to the members of this, one of the most important sections of the American Medical Association, for having chosen me as their chairman. This honor comes to but few of us in a lifetime, and when I was selected I could not but feel that the honor carried with it a great responsibility. In accepting the position, it will probably be remembered, I said: "The success of a year's work would not be accomplished by the chairman but by the work of each individual member."

In looking over the program one must be impressed by the wealth of subjects to be discussed, as well as the names of the authors of the papers. This certainly should convince us that we are to enjoy a treat seldom offered in bodies of this character. Should I attempt to add anything of a scientific nature, I fear it would rather detract from than add to its interest. I have, therefore, concluded to present a subject that concerns us not alone as obstetricians and gynecologists, but as citizens of a great republic—"Criminal Abortion in Its Broadest Sense."

It is high time we should have a heart to heart talk. The accepted definition of the word "crime" is "a breach of law, whether divine or human." Laws are rules, whether human or divine, for the government of the human race, and are enacted for the good of mankind. While the subject may be viewed from many standpoints, still there is a common ground on which we all must stand in order to view the subject in its composite form. It is reasonable to assume that the infraction of a law should carry with it a penalty; whether that law is human or divine, else it would be useless to enact laws; and no law holds good that does not have attached a penalty, which should be commensurate with the importance of the law. While there is probably no one in this audience who would deny that criminal abortion is fast becoming more and more common, still there may be many who may not be willing to take a decided step toward its suppression. The question may be asked: "Does it concern us as physicians? Does it concern us as members of the American Medical Association and of this section? Does it concern us as citizens of this, our beloved country?"

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Possessing the information that we undoubtedly do, should it not be our duty as citizens. as well as physicians, and members of this important branch of the great American Medical Association, to suggest some means for the suppression of an evil that threatens such an onslaught to our civilization? When I say possessed with the information. I say it advisedly. Each and every member of this section can at this moment relate sad death-bed scenes that fairly make the blood run cold. Beautiful women are robbed of their lives, beautiful babes made orphans, and whole families wrecked, by a conscienceless scoundrel who goes free and unpunished by the law of our land.

It is useless to expect ecclesiastic intervention. The clergy do not seem to be at all concerned. To furnish them with this information is to throw away your time. Few sermons are preached from the pulpit for fear of shocking the delicate feelings of a fashionably dressed congregation, and the begging for money to save the souls of the far away heathen seems of more importance. They can not but realize the enormity of the crime from knowledge gained at the bedside of the victim of the abortionist. Yet they do not possess the moral courage to express their convictions to those to whom they are "called" to minister. Their education along biologic lines has, I am certain, in many cases been sadly neglected.

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A careful review of our medical college announcements fails to furnish sufficient evidence of properly taught medical ethics, or medical jurisprudence (I say medical jurisprudence in contradistinction to legal medicine) to justify us at this time in hoping that we may receive much help from them toward the control of criminal abortion.

The average student is not impressed by precept or example with the enormity of the crime, and coming into practice, often a poor young man, is first shocked when he is asked to procure an abortion; but after the wolf has howled at the door for a time he yields to the temptation and often drops into the practice. Far from the Hippocratean teaching of the ancients have our colleges wandered by their utter disregard as to the morals of their students.

The secular press, that for money consideration, carries the offensive advertisements of abortionists and manufacturers of abortifacients in direct violation to our municipal, state and federal laws, will be slow in responding to a call to suppress criminal abortion, and not until the filing of information with officers of the law will they cease to carry into your household the filthy announcements as to how and where the pregnant mother can most easily and safely rid her womb of the products of conception.

Much has been said by the chief executive of our nation on race suicide, and much has been reiterated by other right thinking people; still, little has been done toward the enactment of new laws or the enforcement of those already on the statute books to punish those guilty of the crime. The prevalence of the crime is so patent, that few physicians can say that they are not frequently importuned by what society calls the "respectable element" to commit abortion. Pleas of limited income, the exacting demands of the social world, the desire to travel, the already too large family, and numerous other "reasons" are to you stories "too oft told" to be repeated here.

In an editorial in the *Illinois State Medical Journal*, March, 1908, attention is drawn to a statement of Justice John Proctor Clark to the effect that 100,000 abortions are annually committed in New York.

In a paper read before the Chicago Medical Society by Dr. C. S. Bacon it was estimated that from 6,000 to 10,000 abortions are committed annually in the city of Chicago, and that from 20 to 25 per cent. of all pregnancies terminate in abortion and that of this per cent. one-half are from induced abortion.

With feticide among our best element, and with a constantly increasing influx of degenerates from foreign countries, what can be expected of us as a nation a few generations hence? We, physicians, above all others, are best prepared to answer the query.

It is not my purpose to institute utopian plans, through or by which criminal abortion can be suppressed, still some suggestions may be in order.

1. The obligatory teaching of medical jurisprudence and medical ethics in its true sense in our medical colleges. This should be statutory, and medical examining boards should be empowered to enforce the laws of their states, and declare all schools not requiring a full course in medical ethics not in good standing and their graduates ineligible to practice medicine.
2. The enactment of good and sufficient laws and the amendment of insufficient laws now on our statute books.

This may raise the question as to how this can be done. Or by some it may be asked, are not our laws good and sufficient as they stand? In order to answer the last question, I propounded the following questions to a very able lawyer and had him prepare by way of answer a digest of the now existing laws in the several states and territories.

QUESTION 1.—Is the woman herself guilty of any crime? In how many states is she and how many is she not?

ANSWER.—In nine states a woman who solicits, submits to or performs an abortion on herself is guilty of a felony. In seven states the above offense is a misdemeanor, and in the remaining states and territories, viz., thirty-five, *the woman is guilty of no crime.*

QUESTION 2.—What is the charge and penalty for giving away, selling or advertising abortive drugs and drugs or appliances to prevent pregnancy?

ANSWER.—The charge is a felony in but twelve states and territories out of fifty-one, and the penalties vary from imprisonment for from one to ten years, and in some states a fine ranging from $20 to $5,000. In twenty states the offense is only a misdemeanor. In thirty states and territories there are no laws on this subject.

QUESTION 3.—What is the charge and penalty as dependent on the age of the fetus?

ANSWER.—In four-fifths of the states and territories the age of the fetus is immaterial.

QUESTION 4.—What is the effect of death of the woman operated on as to charge and penalty?

ANSWER.—If the death of the woman results from the operation, in eighteen states and territories out of fifty-one the crime is murder and the punishment is death or imprisonment for life. In six states it is murder in the second degree, and the penalty is imprisonment for life or for a term of not less than three years.

QUESTION 5.—May the offending physician or midwife have his or her license revoked?

ANSWER.—The license may be revoked in only fifteen states out of fifty-one. In thirty-two states there are no laws that can be invoked successfully for the purpose of depriving a physician of his license for this cause. In other words, he may successfully murder indefinitely and go unmolested.

QUESTION 6.—Is a physician who gives subsequent treatment allowed to testify, or is his information privileged?

ANSWER.—There is only one state, Missouri, in which it is provided by statute that a physician is allowed to testify as to facts learned while attending a woman on whom an abortion has been performed.[1]

Are not these answers startling? I think they show conclusively that our laws are inefficient and inadequate in most, if not all, of our states. Now arises the question, how can new laws be enacted and inefficient laws be amended? My answer is, through the influence of the American Medical Association, through its House of Delegates. Let us, the members of this section, through our representative in the House of Delegates appeal to this body and request the president of the

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[1] Section 2635a (Revised Statute of Missouri): In prosecutions for abortion or for manslaughter occasioned by an abortion or miscarriage, or by an attempt to produce either, or attempted abortion, or for any crime of which abortion or miscarriage may be a part of the essential facts to be proved, the dying declarations of the woman whose death is charged to have been caused thereby shall be competent evidence on trial of any person charged with such crime, with like effect and under like limitations as applying to dying declarations in cases of felonious homicide: *provided*, that the party offering such declarations shall first satisfy the court by competent testimony that such woman was of sound mind when said declarations were made; and provided, further, that no conviction shall be based alone on such declarations unless corroborated as to the fact that an abortion or miscarriage has taken place, and in all such prosecutions aforesaid any physician or medical practitioner who may have attended or prescribed for such woman shall be a competent witness in said cause to testify concerning any facts relevant to the issue therein, and shall not be disqualified or held incompetent by reason of his relation to such woman as an attending physician or surgeon.

American Medical Association to appoint a committee to be known as the Committee on Criminal Abortion, whose duties shall be to see that the state societies have appointed similar committees, whose duty it shall be to enlist the interest of their state legislatures in the enactment of good and sufficient laws against criminal abortion, and that this committee of the House of Delegates report annually as to the status of laws on criminal abortion in the different states, as well as what suggestions they may have to make in the prosecution of the cause.

Each state has an attorney-general whose office is at the capital of the state. He is paid a salary by the state, and he, above all others, ought to be interested in the enactment and enforcement of wholesome and useful laws in his state. It is the duty of the attorney-general and his assistants to follow up the convictions of the lower courts for the various crimes. A man is tried in the circuit court or criminal court of one of the counties, and if convicted he appeals to the supreme court of the state. The county prosecuting attorney does not follow the case to the supreme court but the whole record of the case is written up and forwarded to the supreme court and it is the duty of the attorney-general to use his best efforts to uphold the conviction. He studies the case, writes a brief for the state and argues it in the supreme court. Many times he finds that he can not uphold a conviction because of some uncertainty in the wording of the law or on account of some blunder made by the man who wrote it and got it passed in the legislature. The more convictions the attorney-general gets upheld, the greater reputation he gets. He is, if a studious man, better able to decide than the ordinary lawyer whether a proposed law will meet the requirements of the state constitution and whether it will be held a valid law.

It might be suggested that this committee, or the state committee, acting in accord with the national committee, draft a bill, submit it to the attorney-general of the state and ask suggestions from him as to the proper wording of the law before first submitting it for passage by the legislature. When they are sure the law is in good form, then printed copies of it should be sent to every member of both houses of the legislature, and this should be followed by letters from influential physicians in every county of the state to representatives and senators of their respective counties, or by personal interviews, explaining the object, need and purpose of the law proposed, and they should be urged to vote for it. There is no doubt but we can in this way do much good. Let's do it.

DISCUSSION

Dr. W. H. Wathen, Louisville: No subject could be brought before this Section which is of more vital importance in a moral, and I might say in a pathologic sense, than this. We who are doing abdominal and pelvic surgery know how frequently we are compelled to operate because of the induction of abortion. In a moral sense it is offensive to every honest doctor and to every honest citizen. This offense is not any more an offense on the part of the woman on whom the abortion is committed, be she married or single, than it is on the part of the person who commits it. I believe that in most of the cases in which I operate for pelvic trouble resulting from induced abortion the abortion has been induced on the advice of a physician or done by a physician, and I have seen many cases in which abortions have been induced by members of reputable medical colleges. The matter is disguised by the fact that a woman six weeks or two months pregnant is often taken to a hospital for the purpose of curettage. Her uterus is curetted and the product of conception removed. In order to secure legislation there must be impressed on the profession the belief that, *if there is any moral offense in destroying the* life of an unborn child, the moral offense is just as bad four weeks after conception as if the child were killed at eight months. From the moment of conception the child is a spiritual being. Let us all join in our efforts to educate the people, the women and the men of this country, concerning the immorality of having abortions produced at any time and let us join in our efforts in a determination to ostracise any man who will produce a criminal abortion. Let us also join in efforts to have laws enacted that will make it a criminal offense punishable by such penalties as the state sees fit to inflict, death or a sentence to the penitentiary, for any man producing an abortion.

Dr. J. H. Carstens, Detroit: Laws have been enacted all over the country concerning murder but still people commit murder. We have laws in some states concerning abortions, but people produce abortions just the same. With the peculiar development of our civilization, with the rapid bringing up by a very rapid process of evolution of people from a lower stratum of society to a higher, people have not grown morally as fast as they have otherwise. They think that there is nothing earnest in this world, that it is just made for them and for their pleasure and everything that interferes with that pleasure they object to and try to do away with. This question of abortion involves the lack of moral responsibility and the superficial education of our girls all over the country. They are not impressed with the true import of life and the responsibilities of married women. They are not taught that a woman does not exist for social pleasure alone or that she can take her place in society and have pleasure, but that she should still remember her moral responsibility and that it is good and noble and great to be a mother. If we can impress this idea on the minds of the people we can do something to prevent the committing of abortion. If we do not we shall never accomplish much by law. I believe that it is the duty of the medical profession to emphasize this view of the matter, to develop this view of moral responsibility, to try to induce women to have a love for children.

Dr. Helen C. Putnam, Providence: I want to support what Dr. Carstens just now said about education. For the American Academy of Medicine during several years I have been visiting our public schools to investigate the teaching of physiology and hygiene. I have included in that investigation inquiry concerning how teachers feel and what they are doing, with reference to teaching the physiology and hygiene of sex. I have found many instructors anxious about the matter because they see in the schools the need of such teaching. I have found a few trained in biology doing admirable work which I wish to bring to the attention of the medical profession, hoping that physicians will encourage such teachers and will find more especially in their own communities to do similar work. These women trained in biology begin with children at about 8 years of age and include those up to 14 or 15. They instruct through direct personal observation (the "laboratory method") concerning the origin and functions of life in plants and animals. After a year's work, especially if the children are 13 or 14 years of age, they give a frank "sex talk," telling them of the importance of life as they have seen it in plants and animals and comparing it with human life before birth and after. The children's minds in their course of study have traced evolution in Nature, and when they have this sex talk by the teacher they are not startled but receive it as naturally as they learned of plant and animal reproduction. Parents are not offended with startling stories, for the children have grown to the subject naturally. The school committee is not disturbed because there is no complaint from any source. If any wish to know more about what a few teachers are doing to create a changed public sentiment which shall support our views with regard to abortion, I refer you to the detailed reports which the Academy is publishing in its bulletin. While it is not possible to have such instruc tion in all the schools at once, we can begin with one teacher in a school in each community; see that she has a good training in biology and have her do good work in her school as an object lesson to others. If personal effort were made in this way I believe that within ten years we should have accomplished a great deal in changing the public attitude toward sex matters and the sacredness of parenthood that would do more than laws to reach the result we want.

Dr. R. W. Holmes, Chicago: I have had the misfortune for three years to be a sort of mentor on criminal abortion work in Chicago. During this period I have presided over a committee of the Chicago Medical Society to investigate, and to attempt to eradicate the evil; I have come to the conclusion that the public does not want, the profession does not want, the women in particular do not want, any aggressive campaign against the crime of abortion. I have secured evidence. I have asked different physicians, who either had direct knowledge of crime against the prisoner before the bar or who could testify as to her general reputation, to come and testify. They promised to come, but when the time for trial is at hand no one appears. On the other hand, so-called reputable members of our Chicago Medical Society regularly appear in court to support the testimony of some notorious abortionist. A Chicago attorney has told me that it is not possible to get twelve men together without at least *one of them being personally* responsible for the downfall of a girl, or at least interested in getting her out of her difficulty. I am convinced that legislation *is not needed, at least, in Illinois.* We have as good a law as perhaps can be made. It is the enforcement of law that is needed. What can you expect when a member of our legislature is backing financially and politically one of the most notorious abortion hospitals in Chicago? It is necessary to go back and educate the boy and girl concerning the meaning of sexual life. The fact should be taught that life begins with conception and not with quickening. Then perhaps in the coming centuries we shall have reached a time when there will not be abortions. I believe that half of the midwives of Chicago get their support from criminal abortion work, as I know definitely a quarter do. One midwife took out a license to help out the family exchequer. For one week she had a sign up; then the husband said that they could not run the risk of the police coming down on them. In that one week there were ten applicants for criminal abortion and not one for a confinement. I do not think that it is a good thing for the woman to be held criminally. Morally she is a criminal. If she is legally a criminal you can not get any evidence of it. I have evidence of this every day. I have repeatedly taken antemortem statements, with the express provision that if the woman recovers nothing shall be done, that only if she dies shall the *person be prosecuted* I have positive evidence that prominent men in Chicago—and Chicago is not different from other cities—will commit abortion. What can one do? In a certain county society complaints were lodged with the censors concerning three physicians known by repu- nd deed to be professional abortionists, and the censors take action.

entally it is a matter of education which should be the medical school. Until three years ago the school ch I am connected did not have any systematic in- on criminal abortion. It had a little lecture by a ho did not present the actual facts. Every medical should have a course on that subject. There should pressed on the men before they take up their work the gers to the woman, to themselves and the moral respon- bility assumed in the matter of abortion. If also the boy and girl in school are taught something of this they will grow up with moral stamina not easily overcome. They will know facts and will live accordingly. Many now make themselves believe that there is no life until the movements are felt. When the false teaching in this respect is put aside good will be accomplished.

Dr. Edward T. Abrams, Dollar Bay, Mich.: For the past two years I have been a member of the Michigan legislature and also chairman of the committee on public health of that body. One of the bills which came before the legislature was drawn, I think, by the committee on legislation of the state medical society, and bore directly on the first question raised by our chairman to-day—whether or not the woman should be made a party to the criminality of the act. I introduced the bill at the request of the committee, and within twenty-four hours after I was called before the judiciary committee, which was composed entirely of lawyers, to answer the question whether or not I favored abortion. I received half a dozen letters from half *a dozen circuit judges in the state of* Michigan who were my friends, asking me how long since I had turned over a new leaf. I was assured by the best legal authority in our state that there *would be no more powerful* inducement for the concealment of abortion than to make the woman a party to the criminality of the act, because it would destroy absolutely the *method of getting evidence. All the* lawyers told me that. Per contra, we had absolutely no trouble in adding an amendment to our medical act giving the board of registration an absolute right to take from any practitioner his license to practice within the borders of the state after he had been convicted by due process of law of having committed an abortion without requiring further evidence than the records of the court.

Dr. W. O. Henry, Omaha: I believe that the medical profession *should feel responsible for the education* of the boys and girls in the public schools concerning this question. These boys and girls should be taught two things: First, the physical wrong and injury that results. Many do not know this until they have passed through the experience. In the second place, they should be taught the moral wrong. In a measure we should depend on the clergy for this latter. I believe that the clergy should be informed concerning the physical injury and the moral as well. I should be glad to see work carried out along the lines of education on this matter in the high schools, seminaries and colleges, and among men and women of the country through the medical men and the clergy.

Dr. Denslow Lewis, Chicago: It is well and good to enact laws and to punish the criminal practitioner and midwife, but what good does that do to the girl, and how does it save the next girl? I believe, as I have believed for many years, that this matter of education of the young in sex relationship and also regarding venereal infection is our sovereign duty and should be our chief privilege. I am delighted that at last the American Medical Association has created a Board of Public Instruction in medical subjects, but I am astonished to find in the report of this Board of Public Instruction, made yesterday, *the statement that* gynecologic subjects and matters pertaining to sexual questions can best be taken up through circular letters to physicians and carefully prepared monographs by some first-class *authority in the medical profession.* This is well, but action in this very important matter should be immediate. The girl requires no monograph from a first-class authority to learn the *truth. She needs to know that* impregnation and conception often follow the sexual act. Those of you who, like myself, have had charge for years of maternity hospitals, know that many young girls seen there have submitted to the sexual act without the slightest knowledge of the probable result. For that reason it is incumbent on us to urge on this Board of Public Instruction immediate action in the hope that another year may not pass without something being done so that every girl may know the consequence of indiscretion. The boy should know the dignity of virility and his duty and honor toward every woman. He should be taught the healthfulness of continence and the advisability of sexual control.

Prof. August Martin, Berlin, Germany: I believe that in Germany and everywhere all agree in condemning criminal abortion. It is forbidden by law; it is forbidden by the professional code of ethics. Laws have *been issued in numerous* communities to try to suppress criminal abortion, but I do not know of any which have had success. Our laws themselves place great difficulties in the way of legal action by forbidding us to speak about professional secrets. When we are called in a case of criminal abortion we are not allowed to give evidence unless the parties interested in the case give us permission and frequently this permission can not be given as the poor patient is dead. But when a good chance is offered to give evidence then indeed in every case our courts condemn criminal abortion with the utmost severity. Joint efforts in condemning criminal abortion as on this occasion by and by will contribute to restrain the evil among professional men.

DR. R. S. YARROS, Chicago: To formulate laws and have them enacted is comparatively easy. To enforce a law is an entirely different thing. You can not enforce laws, as some of the speakers have already said, with which the public has little sympathy. Even if we could enforce anti-abortion laws the problem would not be solved. I find that among the poor there is very little danger of race suicide. They have not learned yet to practice prevention, nor do they frequently resort to abortion. Their great love for their children is a factor in the situation, and in this respect the higher classes might well take a lesson from them. Unfortunately, they often have too many children, and one is inclined to preach moderation and restraint without regard to race suicide. The rich on the other hand go to the other extreme. They frequently have no better excuse than that it is inconvenient to have a child at this or that particular time. They have no difficulty in securing professional services to help them out of their difficulty. As for the unmarried victims, it is the disgrace that society has imposed on them, as well as the economic inconvenience that drives them to commit abortion. It seems to me, therefore, that the most stringent laws and their enforcement would not remedy the evil. The proper education of the public on the subject is the most important duty before us. The blame should not always be placed on the woman. It should be realized that there are two parties. I do not want the woman not to take her share of the blame, but I want the man to take his. We all know that men frequently encourage the woman to have an abortion produced and are willing to pay any amount of money for such services. In this city there has been considerable education carried on among women of the dangers of infection following abortion and the sex problem in general. The work has met with sympathy and enthusiasm on the part of the women. We hope that the same kind of work will be carried on among men with the same success.

DR. THOMAS F. LAWRENCE, Columbus: Moral problems can not be settled by statutory enactments. A certain amount of restriction can be had and a certain amount of educational value must follow every statutory enactment provided that enactment is enforced. It has been mentioned that there has been great difficulty in obtaining evidence to enforce the statutes in question. In Ohio one of the greatest stumbling blocks has been the question of viability. The courts determined that there was no great legal responsibility unless the fetus were of viable age. If our statutes are to accomplish the results they should we must first educate the public mind and morals to the belief that conception means human life and that the interruption or destruction of that conception means murder just as much as if the child had been murdered with a bludgeon after it had been delivered into the world. Anything less than that is a mere travesty on the truth and on true morality. Something more must be considered if we are to accomplish that which we hope in these matters. There is an insidious psychologic element constantly at work in the pseudo-medical journalism of the country. Every now and then a journal which has been or has purported to be under ethical management passes into the hands of the most blatant charlatans of the country. One such within the past few months has passed from ethical management in to the hands of one who has made 'peruna' a household word and who has fought serum therapy and everything which modern truth and science have established as valuable in the saving of human life. Sixty thousand of his journals are to-day being distributed among the laymen of the country to educate the public against the truth and to believe that the doctors when they stand for truth stand for some selfish purpose. The time has come when we must educate not only the doctors but the laymen. We must reach the layman in a way that will go home to him and cause him to respect the teaching as he listens to the priest or reveres his Bible. The truth must go to him in such a way that he will not look on such teaching as an advertising scheme for the physician, but as truth and as something for which he pays. Then he will accept it. We have all learned that the man who gets something for nothing appreciates it not. We must start with a higher moral conception among medical men. We must realize our own professional responsibility to the laity. In our consideration of criminal abortion we must not feel that we are referring to abortion among unmarried women alone, but of abortion as it is found in general to-day.

DR. WALTER B. DORSETT, St. Louis: The city of St. Louis has not been remiss in her duty in this regard. A paper was read recently in one of our meetings by Dr. John Grant of St. Louis on the subject of criminal abortion. The meeting was attended by many of the laity and clergy. One clergyman, who was much interested, promised to preach a sermon before his congregation, but his board advised against it. It seems to me from this that things have come to a bad pass. In order, however, to show you what has been done and what can be done, not only in the enactment of laws but in the enforcement of them, I will quote from a letter which I received from Dr. Wheeler Bond, the health commissioner of St. Louis, in response to an inquiry I made of him. He said that when he accepted the position of health commissioner there were licensed physicians and midwives who concealed illegitimate under the pretense of legitimate practice, and charlatans who without any authority proclaimed themselves doctors and waxed fat on abortions. There were also lying-in institutions which advertised that they accepted only legitimate confinement cases, but which gave out the understanding that all cases would be received. The St. Louis Medical Society found on investigation no less than three of these abortion shops in which young women who came there to await their confinement were kept as prostitutes to pay for their confinement. During the following year many of these were put out of business. By the enforcement of the federal laws also we have in St. Louis dealt with a number of the advertising quacks. We must have good laws before we can expect results, and therefore I believe that we ought to take some action on the question.

IN MEMORIAM NICHOLAS SENN; THE RESPONSIBILITIES OF THE HOUR

INTRODUCTORY REMARKS BY THE CHAIRMAN BEFORE THE SECTION ON SURGERY AND ANATOMY, CHICAGO, 1908

RUDOLPH MATAS, M.D.
NEW ORLEANS

Distinguished Guests and Fellow Members: I feel, as your presiding officer, that I would be remiss in the discharge of my duty and grievously at fault with my own sentiments, if I failed to notice that this day is made sadly notable by the absence of one who for more than a quarter of a century was a Titan in our midst and whose voice, now stilled forever, thrilled and swayed our assemblies with the fervor of his eloquence, the magnitude of his accomplishments, the stimulus of his example and the vast power of his exhaustless energy—Nicholas Senn.

Vir praeclarus et ornatus—Senn, the incomparable teacher, the peerless clinician, the scrutinizing pathologist, the perennial investigator, the faithful historian and charming raconteur, the world traveler, the philosopher, soldier, patriot and organizer; Senn, the philanthropist, the citizen of Chicago and of the world; Senn, one of the greatest masters of our art—will remain an imperishable name in the great pantheon of American surgery. His passing out of this community of which he was a *magna pars*, must be felt like the extinction of some great elemental intellectual force. as serene and unfailing and strengthening as the great natural forces that freshen and invigorate the earth.

In the shades of this great and hospitable metropolis. for so many years the center of his tireless activity: in the great city which he enriched by the products of his puissant intellect and generous bounty: in the heart of this great Northwest—so prolific in extraordinary men; here, in this region of vast potentialities. and following in the footsteps of his eminent predecessor and friend, Christian Fenger—he sowed and assiduously cultivated the vigorous seed of Teutonic genius and made it yield rich fruit in the cult of surgical philosophy and surgical art. Again, in the councils of this Association, which he strengthened by his wisdom and example; in the gatherings of this, his special section. where he stood as a high priest at the shrine of science: and throughout the American continent and wherever the science and art of surgery are taught and practiced and the language of medicine is spoken, the name of Nicholas Senn will always be mentioned with reverence, honor and affection.

His life work. his deeds and marvelous achievements have become a part of the history of surgery. His unparalleled labors have been told only too recently by more eloquent and gifted panegyrists to justify repetition on this occasion. As one who enjoyed the privilege of his personal friendship and encouragement in the earlier days of his professional life, and in the name of this great gathering of representative American surgeons, his associates and fellow workers, successors and friends, now assembled to prosecute and continue the great work with which his life was most closely identified—I join the medical profession and people of this great city, especially those within the immediate circle of his life. who mourn his loss with the greatest poignancy. and condole with them in profound sympathy at a common bereavement.

* * *

As the needle on the dial points to the hour when the "Clans must gather to the trysting place," we are reminded that the Section of Surgery and Anatomy will now assemble for the forty-seventh time since June 7. 1860. when it was created a separate arm of our national body. As the chariot of time has rolled by, each annual session has left its impress on the history of American surgery. an imprint which has yearly become wider. deeper and more indelible, as the parent organization has advanced in maturity, strength and prosperity.

The labors of our predecessors have not only contributed to our individual betterment as members of this guild. but they have added to the dignity and luster of surgery by their magnificent accomplishments. With this great heritage and its traditions, a measure of accountability for the safeguarding of the trust has also been handed to us. which adds to the grave responsibilities of the hour. As I stand before this great gathering of distinguished fellow-workers. privileged by your grace and good will to give the signal which is to inaugurate the forty-seventh session and launch it into history. I feel profoundly conscious of my own shortcomings and unworthiness, yet deeply grateful that I should be vouchsafed the privilege of gazing on the inspiring and magnificent panorama offered by the ever expanding conquests of American surgery, from this lofty height.

As I survey the field before me and read the past. the present and the future. in the faces of the stalwart men who represent the diverse generations of productive workers here assembled, including those who have accomplished, those now accomplishing, and those who are still to accomplish great deeds. and who are to exalt our traditions. I feel assured that one year more of fruitful endeavor and achievement will be added to the emblazoned and imperishable chronicles of our organization by the proceedings of the surgical section, which I now have the honor to open.

SIMPLICITY IN PRESCRIBING.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON PHARMACOLOGY AND THERAPEUTICS, OF THE AMERICAN MEDICAL ASSOCIATION, CHICAGO, 1908.

M. HOWARD FUSSELL, M.D.
PHILADELPHIA.

Are fixed formulas of drugs necessary or desirable in the treatment of disease? When the animal organism is injured by disease or traumatism there is an inherent tendency to self-repair. Usually this repair by Nature is toward complete restoration of the function of the organism. Occasionally the repair is vicious and harmful to the further normal use of the body. The physician's duty is to stand by and allow Nature to complete her work if the tendency is toward cure, to guide her if erratic, to correct her if vicious.

OUR KNOWLEDGE OF DRUG ACTION.

In so far as drugs are employed in thus aiding Nature, it must be remembered that, even with our properly boasted advance of knowledge, we are woefully ignorant of many of Nature's methods, and know little accurately of the effects of chemicals and drugs on these methods. We know practically nothing of the effects of the myriads of combination of drugs. We do know the physiologic action of enough simple drugs or their active principles so that we may properly employ them in helping Nature rid herself of injuries however obtained.

The physician, therefore, acts wisely when he uses only a single drug or a simple combination of drugs which experience has taught him or he has learned from others will do good but the limitation of which he recognizes. Of necessity one can not have the slightest idea of the effect of a mixture of drugs when he is ignorant of the effect of any one of the ingredients of the mixture. How often do we live up to this standard of action?

I believe that the host of nostrums, the myriads of ethical preparations, the many formulas of the National Formulary and the fixed formulas of the Pharmacopeia are the outcome of the natural desire of the laity for relief, coupled with their inherited belief from ancestors eons past, in the infallibility of drugs in curing disease. This latter, a mistaken belief of the laity, was fostered in ages past by the total lack of knowledge on the part of the physician of the causes of disease affecting the human family and of proper remedies for the relief of disease. Such men as Harvey, Louis, Virchow, Pasteur, Koch, have pointed the way along which every whit of our efficient therapeutic knowledge is to be gained.

TREATING THE PATIENT RATHER THAN THE DISEASE.

Given the exact knowledge of the diseased condition of a patient and its cause, therapeutics is usually simple. If we know the cause our present knowledge will either enable us to remove that cause or it will not. The cause once removed, the patient recovers so far as his powers of recuperation allow. If we can not remove the cause, then the condition of the circulatory organs, respiratory, eliminating and digestive organs must receive our attention, and it seems to me in the great majority of cases we must as yet apply our various remedies in this way, be they drugs, surgery, hygiene, mechanics or what not.

Physicians when in practice must remember that of which they have full knowledge, that diarrhea, constipation, cough, dyspnea, etc., are but symptoms, the causes of which may be as far apart as the antipodes. We may be forced to treat these symptoms, because of their inherent danger or annoyance, but to treat a diarrhea which is caused by overeating and one which is caused by an inflammation of the intestine with the same remedy or combination is to fall far short of our duty. Therefore, it seems to me all formulas for any disease or set of symptoms are wholly out of place.

The sooner our young men are taught and come to realize what the master minds for ages have always taught, and what Waring wrote in 1866, that "the practice of treating a disease according to the name, without minutely examining into each particular case and adapting the appropriate remedies to the several indications which present themselves, can not be too strongly reprobated."

Then, and not till then, will fall out of fashion the prescribing of nostrums, the combining of drugs of unknown quantities, of ethical formulas and of any formulas ready made, be it found in the National Formulary, in the Pharmacopeia, in Non-Official Remedies or where not. As can be seen by examining the various works on therapeutics published about the time Waring wrote, all of the authors were insisting that physicians should study their cases and should not prescribe for the name of a disease from which the patient is supposed to be suffering. A century before isolated minds insisted on the same sound principle.

It needs but a glance at the various so-called ethical preparations with which the market is flooded to-day and the literature which finds its way into the office of every practicing physician to see that the same admonition needs to be given as often and with as much force to-day as it was announced by Waring in 1866.

Indeed, the lesson needs to be pushed home more forcibly than ever. Most firms of manufacturing chemists, or combination of individuals in the guise of pharmaceutical chemists, have on the road visiting the office of every physician detail men, plausible, cute, superficially informed, glib talkers, who take hours of the physicians' time to tell them that this combination for typhoid fever, or this for neurasthenia, or that for pneumonia, is efficacious, it is elegant, it is a favorite prescription of a famous physician. It is the rare young doctor who is not caught, and either puts in his own office these combinations or orders them from the pharmacist.

The young doctor, possibly without hospital experience, fails to grasp the fact that one compound prescription even of his own devising never fits numerous cases, even of the same conditions. He tries some combination offered by the detail man, his patient gets well (probably in spite of the medication), he then gets into the habit of prescribing some firm's formulas until either his own shelves or those of the neighboring pharmacists are filled with bottles for fixed conditions.

PRESCRIBING PROPRIETARIES.

Examination of the prescription files of any of the drug stores proves that proprietary preparations are used by reputable physicians to-day in a large percentage of the prescriptions. It will also be seen that there is a large percentage of prescriptions which contain more than three active ingredients which are not proprietary.

Dr. F. E. McCullough of St. Timothy's Hospital has been good enough to examine 6,200 prescriptions now on file in various drug stores of Philadelphia; 4,000 of these were from the files in 1907, 2,200 were from files of 1901 and 1902. In 1907 930 of these, or 23.25 per cent., were written either for a proprietary remedy to be used alone or contained a proprietary remedy in the body of the prescription, and 100, or 4 per cent., contained more than three active remedies.

It is extremely interesting to note that in the year 1901 exactly 32 per cent. of the prescriptions were for proprietary remedies, while in the year 1907 only 23.25 per cent. contained proprietary remedies, showing a reduction of 8.75 per cent. in the last year. This is an excellent showing for the result of the agitation against the use of proprietary remedies.

WHY THESE MIXTURES ARE USED.

Now there must be some reasons for the use of these various mixtures, some containing nine or more ingredients. Likewise there must be some reason for a physician prescribing or dispensing a "shotgun" mixture containing four or more active, and often incompatible, drugs. What are the reasons and what the remedies for the evil?

The greatest reasons for this defect in our practice, it seems to me, are ignorance, indolence and cupidity on the part of the physician, manufacturing chemist and pharmacists; ignorance on the part of both physician and pharmacist, due to faulty training or to the deliberate putting aside of facts well known at graduation, because it is much easier to follow than to originate; cupidity due to the desire for unusual financial returns, which can seldom come from scientific practice of medicine and pharmacy. The physician has either failed to learn the great lesson stated by Waring in the book above quoted, or has ignored it when practicing his profession.

The pharmacist may have been so impressed with the importance of drugs that he helps to fix the same error on the physician. He may easily impress his customers that there are certain combinations which are good for coughs and constipation. That druggist is almost unique who does not have his own "blood purifier" or vermifuge. He also, too commonly, will prescribe over the counter a concoction of his own combining, or a "patent medicine," for any symptom or ailment of which the patient complains. If pharmacists are to have the proper relations with physicians, if they are to aid in the proper use of drugs, they will refer every complainer to competent physicians who they know do not prescribe for symptoms, but who study their cases and prescribe for the condition found.

The physician or the pharmacist who thus fails in his duty has missed, or not appreciated, Waring's views:

> In prescribing medicines for the removal of disease, it should be borne in mind, that Nature tends to repair injuries inflicted on the body, and repair the disturbed conditions of the system without the assistance of any medicine whatever. The credit which is really due to this natural healing tendency is too often ascribed to some drug which the patient may happen to be taking.

UNSCIENTIFIC PRESCRIBING

Both physicians who prescribe and pharmacists who advise a recipe containing many ingredients either proprietary or original, are apparently ignorant of the fundamental principle of rational therapeutics, or they are too indolent to apply it. That is, before a drug or a remedy of any kind can be expected to aid in the cure of a disease the history of the case must be obtained, a careful physical examination must be made, in which the condition of each organ must be noted. When this is done, and only then, can a remedy or a drug be rationally applied.

It is true that we give certain names to certain groups of symptoms which may or may not have a known cause—pneumonia, typhoid fever, neurasthenia, etc. It is also true that it frequently occurs that in spite of the most careful history and pain-taking physical examination we are unable to find the cause of the symptoms present, or even to give a name to the ailment. If the physician has been properly schooled, however, by education or by experience he will not be at a loss as to the proper actions in the case.

He must treat the conditions found present, of the heart, the kidneys, the respiratory organs, the nervous system, the digestive organs, etc. It makes no difference whether he recognizes the name of the disease or not, so long as he attempts to find the cause of the symptoms. If the medical schools are at all to blame for the present, happily decreasing, custom of using remedies for grippe, pneumonia and typhoid fever it is because they have failed to grind into their students these important principles of medicine and surgery. When the millenium arrives and all physicians and pharmacists act together, the one in properly diagnosing the condition and prescribing for it, the other in limiting himself to the filling of the doctors' prescriptions and abstaining from counter-prescribing and the doling out of remedies asked for rheumatism, constipation, etc., then will the cause of polypharmacy have disappeared, and with it the long array of proprietary mixtures. For the physician who studies his cases will soon learn from experience, if he has not from his school, that it is useless to mix in a conglomerate two or three stimulants and sedatives, and worse than foolhardy to prescribe some firm's remedy for rheumatism even though it be "the favorite prescription of some eminent practitioner." That in order to control the action of the heart, of the kidneys, etc., it is much better to use a single drug or drugs in very simple combination than it is to use such mixtures as the following:

SPECIMEN PRESCRIPTIONS

Each fluidounce contains:

Tincture Pilulifera	120 m
Syrup Lactucarium	120 m
Tincture Cocellana	40 m
Syrup Squill Compound	24 m
Cascarin (P. D. & Co.)	8 gr
Heroin Hydrochlorid	8/24 gr
Menthol	8/100 gr

℞ Natrii Iod.	ʒiss
Natrii Brom.	ʒiii
P. Glandulae Thyreoidae	ʒiss
Ext. Ignat. Amara	gr. x
Ext. Hydrastis	ʒi
Ext. Valerian	ʒi
Ext. Sumbul	ʒi

Cap. xxx.
Sig.: One Capsule at Bedtime.

Each two fluidrams is said to contain:

Hexamethylenetetramine	7½ grs
Saw Palmetto	5 grs
Santol	2½ grs
Coca	2½ grs
Nux Vomica	¼ gr

The first of these is a so-called ethical preparation. The formula is taken from an advertising page of the *American Journal of Pharmacy*, January, 1907. If it is of value, can there be any doubt that the 8/24 of a grain of heroin is the active ingredient? And this active ingredient is not indicated on the label. Would it not be better, cheaper and more scientific to prescribe the heroin? But perhaps the preparation is a "good repeater," as is claimed by the manufacturers in another advertisement. The second is culled from a prescription file and was written during the last year. The writer is a good doctor. The third is taken from page 136 of "New and Non-Official Remedies." It should have been omitted, if the plea for simple medication here made is of any value.

Ignorance of how to write a prescription may deter beginners and may be one reason why young physicians fall easily into the habit of using ready-made mixtures. If this is true, then it must be the duty of our medical schools so to implant a knowledge of the use of drugs and remedies that the recent graduates will not be led away by agents of any of our manufacturing drug firms.

INDOLENCE

The normal indolence common to us all finds great encouragement in the fact that many ailments, indeed the vast majority, will be cured by Nature, if the patient is but let alone. It is, therefore, tempting to take chances with all patients who apply, instead of making examinations carefully, to tell the patient he is suffering from some certain disease and prescribe for him or give him a remedy we may fancy will relieve. This is all the ordinary patient desires, and he wants to be given some remedy for that name. How often a patient comes into the office and says, "Doctor, please tell me what ails me." He then asks what the drug is in the prescription which has been given. When the laity demands careful treatment they will get it from all and not only from a few.

CUPIDITY

Cupidity on the part of drug firms leads to the exploiting of all sorts of combinations with which the ignorant, and the enlightened but careless, physicians are waylaid. Far be it for me to say or to intimate that all the firms of manufacturing chemists are a menace. To some of these firms we owe many of the most useful remedies we have to-day, but many of the combinations of capital which call themselves drug firms trade on such good names as are known to us all. They are composed of irresponsible individuals, who have no other desire or motive than to sell goods. Such firms' preparations can not be too strongly condemned. Most firms make extravagant claims for preparations and combinations without sufficient data.

THE REMEDIES

First, our schools, both of medicine and pharmacy, must send out into the world men so grounded that the one will diagnose his case and prescribe for the condition found present, and the other will compound the prescriptions written for out of the best drugs. Proper education is absolutely necessary. A deep sense of the obligation of the physician to the laity and to his co-laborer, the pharmacist, is equally necessary. I very much doubt if the majority of practicing physicians have any accurate knowledge of what the U. S. Pharmacopeia is. I doubt if one in fifty physicians have either the Pharmacopeia or a dispensatory on their shelves.

Ignorance must breed disuse. I believe that there are still many errors in the Pharmacopeia. For instance, I can imagine no good reason for the insertion of the formula for the clay poultice; certainly the mixture is useless, and it would appear to give the manufacturing firm a good basis for recommending its use, because it is now official. Like remarks can justly be made of the compound powder of morphin and the compound acetanilid powder. There are about 1,000 remedies in the Pharmacopeia; of these sixty-eight are compounds. If these compounds are examined it will be seen that while they comprise but 7 per cent. of all the remedies in the Pharmacopeia, they are, for the most part, rational; that is, they are not of the conglomerate class that I have quoted. All the teachings of this book and of the dispensatory point to the proper method of using drugs, viz., either singly or in such a simple combination that the one will not antagonize the other, but may actively help. These two books, therefore should be on our shelves; the doctor should familiarize himself with their contents and use them, rather than rely on manufacturing firms for his combinations, or combine for himself a senseless lot of drugs. The little volume, "New and Non-Official Remedies," published by the American Medical Association for the Council on Pharmacy and Chemistry, should be of great value to practitioners of medicine. The Council on Pharmacy is composed of learned, hard-working men, illy-paid for their labor. Sollmann[1] gives a warning, however, when he says that the rules for admission of preparations to the pages of the report should be made more exacting.

I feel that it would work vast good if compound prescriptions, mere pharmaceutical mixtures, like the one quoted, were omitted. The following is another example of what seems to me an error:

ELIXIR VIBURNI COMPOSITUM (STEARNS).

An elixir each 30 c.c. (one fluidounce) of which is said to represent: Blackhaw, 2.6 gm. (40 grains); cramp bark, 2 gm. (30 grains); squaw vine, wild yam, Jamaica dogwood and saw palmetto berries, of each 1.3 gm. (20 grains); pulsatillo, 0 65 gm. (10 grains), in a menstruum containing 17 per cent. of alcohol.

The admission of such mixtures, it seems to me, must bring discredit on the book and work harm to the Council.

What is the active principle or the physiologic actions of a single one of the drugs in the compound? Unfortunately there are many such articles admitted. They, one and all, violate the principle, the sound practice, of prescribing only drugs of which we know something singly or in simple combination. The Council of Pharmacy through its publications must teach physicians what *not* to use as well as what articles are useful.

The pharmacist can help or hinder the physician in his aim toward correct prescribing.

First, he must be a learned compounder of drugs, a graduate from a reputable school of pharmacy.

Second, he must not do counter prescribing. He must by argument with both physician and laity, and particularly with the latter, teach that ready-made formulas are as a rule not desirable. His arguments will have great weight.

Third, he must absolutely never recommend ready-made formulas for any disease. As rapidly as possible pharmacists should rise to the position of drug compounders only and keep no patented or proprietary remedy in their shops.

CONCLUSIONS.

Physicians should use simple drugs or simple combinations of drugs of known value directed to the condition found.

Pharmacists should confine themselves to drug dispensing and discourage self-medication by the laity.

189 Green Lane (Manayunk).

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1. The Journal A. M. A., May 9, 1908

Original Articles

DIPHTHERITIC GENITAL INFECTION SIMULATING PUERPERAL FEVER.[*]

WILLIAM CUTHBERTSON, M.D.
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CHICAGO.

The gravity of puerperal fever, its widespread prevalence, and its persistence in spite of all the safeguards thrown about the puerperal patient by the adoption of modern aseptic precautions, make any addition to the literature of this subject acceptable.

It is, unfortunately, the almost universal custom to call every septic fever occurring during the puerperium "puerperal fever," and this arises from the fact that bacteriologic examinations are not made often enough to determine the exact cause of the fever, and thus properly to classify the variety of the disease. In the light of our present knowledge, it is as manifestly improper to call a diphtheritic genital infection in the puerperal woman "puerperal fever" as it would be to call a malarial infection occurring during the same period by a similar name.

We know that true puerperal sepsis is one of the most fatal infections we are called on to treat, while diphtheritic infection, if recognized early, is one of the most hopeful. Early recognition of the disease by bacteriologic examination, and the resort to anti-diphtheritic serum should enable us to cure every one of these cases, and thus contribute materially to the reduction of the mortality at this critical period of woman's life.

The puerperal infections are best classified etiologically by Dr. C. S. Bacon,[1] of Chicago, as follows:

1. Streptomycosis and staphylomycosis (true puerperal fever).
2. Colon bacillus infection.
3. Pneumococcus infection.
4. Diphtheria.
5. Gonorrhea.
6. Sapremia.
7. Puerperal tetanus.
8. Mixed infections.

All the older text-books on obstetrics mention diphtheria as a not infrequent cause of puerperal fever, but as they antedate the discovery of the Klebs-Loeffler bacillus, they make no mention of any cultures, consequently the conclusion must be drawn that not all the exudates which they describe were due to that particular germ. It is well known that not all those cases in which there is a grayish or yellowish membrane lining the vagina, covering the cervix or spreading over the torn surfaces of the perineum, and which leave a bleeding surface on removal are true diphtheria. The investigations of Bumm and Widal have shown that the majority are due to a superficial necrosis, caused by the streptococcus alone or in conjunction with other organisms, usually saprophytes. We must not be led into the belief that a puerperal woman with an exudate in her throat and also on her genitals is suffering from diphtheritic infection: but only after cultures have been made from the genitals and the Klebs-Loeffler bacillus demonstrated are we justified in resorting to the diphtheria antitoxin treatment.

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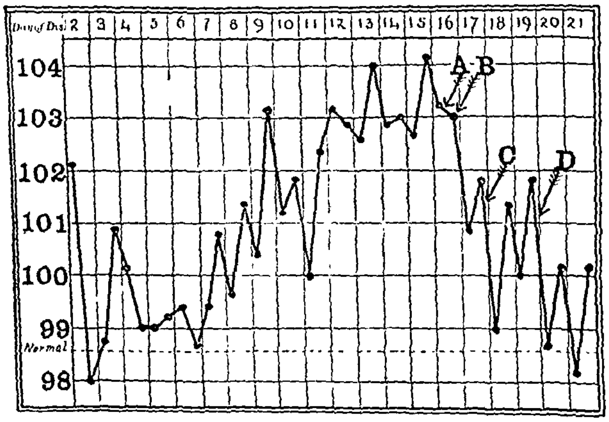
[*] Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Bacon, C. S.: Lectures on Obstetrics.

Erich Martini[2] states that the first definite report confirming the presence of bacteria in the blood of patients suffering from puerperal fever dates from the year 1869. Coze and Feltz[3] demonstrated streptococci (chain bacilli), and by subcutaneous injection succeeded in fatally infecting a guinea pig. They failed to procure pure cultures, however.

In 1872 Waldeyer[4] described spherical bacteria (cocci), which he demonstrated in the diphtheritic exudate or membrane from the uterine mucosa of four patients who died from puerperal fever. He also demonstrated their presence in the puriform masses of the uterine lymph vessels and ligamentum lata, in the peritoneal exudate—in the liquid as well as in the pus flakes—and once, also, in the pericardial fluid. In all his cases the bacteria were located outside of the pus cells. The pure culture of these bacteria was affected after Koch had solved the problem of pure culture. Czerniewsky was the first to succeed in obtaining pure cultures of the exciting cause of puerperal sepsis; in this manner he was able to demonstrate the presence of streptococci in the lochia of mild and severe cases of puerperal fever.



Temperature chart in a case of diphtheritic genital infection simulating puerperal fever. A, antitoxin administered, 3,000 units; B, antitoxin administered, 3,000 units; C, antitoxin administered, 2,000 units; D, antitoxin administered, 2,000 units.

Comparatively few cases of diphtheritic fever are on record, and all writers regard the condition as a serious one. It was not until 1895 that true diphtheritic fever during the puerperium was demonstrated by the culture of Klebs-Loeffler bacillus, and its treatment by antidiphtheritic serum instituted.

The following table summarizes the reported cases:

List of Reported Cases.

Author.	Admin. dipth. antitoxin.	Bacillus demonstrated.	No. of cases.	Result.
Bumm[5]...........	Yes	Yes	1	Recovery.
Nisot[6]...........	Yes	Yes	1	Recovery.
Haultain[7]........	Yes	Yes	1	Recovery.
Longyear[8]........	No	Yes	1	Recovery.
Longyear..........	No*	Yes	1	Death.
Longyear	Yes	Yes	1	Recovery.
Longyear	No	Yes	1	Recovery.
Longyear	Yes	Yes	1	Recovery.
Longyear	Yes	Yes	1	Recovery.
Jacobs[9]..........	Yes	Yes	1	Recovery.
Williams[10].......	Yes	Yes	1	Recovery.
Clark[11]..........	Yes**	Yes***	7	Recovery.
Favre[12]..........	No	Yes	1	Recovery.
Piassetzky[13].....	Yes	Yes	1	Recovery.
Lop[14]...........	Yes	Yes	1	Recovery.
Orband[15]........	Yes	Yes	1	Recovery.
Ungara[16]........	Yes	Yes	2	Recovery.
Raw[17]...........	Yes	Yes	3	2 recoveries
Fitzgerald[18]......	No	No	1	Recovery.

* Antistreptococcus serum used.
** Double serum used.
*** Staphylococci also found.

J. Anderodias states that Mahieux, in 1857, published an observation of a gangrenous diphtheria occurring in a recently delivered case which was transmitted from the mother to the infant. This diphtheritis was carried from the uterus to the mouth, affecting the infant also, and terminating in the death of both.

There is little doubt from his report that these cases were due to infection by the bacillus of Loeffler, although this bacillus was at that time unknown.

Hervieux published a case in 1866[19] which was evidently true diphtheria, but here also the science of bacteriology had not been developed.

In 1885 Garrigues[20] published an article on puerperal diphtheria, in which he describes the appearance of the diphtheritic exudate occurring in the genital region of recently delivered females. His observations are based on 29 cases. As diphtheritic cultures were not made, it is, of course, impossible to state whether they were all purely diphtheritic or not.

I present the following case:

Patient.—Mrs. M. K., Irish, aged 37, housewife.

History.—Patient had had no serious illness since childhood, but had been pregnant four times. Her last pregnancy required instrumental interference, but there was some edema during all four pregnancies. She had had no miscarriages or abortions. During the present pregnancy there had been some headache and emesis. Had been a moderate edema of the face and extremities during the last three months. The urine had been diminished in quantity and muddy in appearance.

Labor.—Labor came on at 5 a. m. June 21. The pains, at first weak, became very strong, but the patient was not able to deliver the child. She had two convulsions during the day. Forceps were applied at 2 p. m., but the attending physicians were unable to effect delivery. Patient who was delirious was admitted to the obstetric service of St. Luke's Hospital at 11 p. m. of the same day. Examination revealed a very extensive

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2. Martini, Erich: Deutsch. med. Wchnschr., 1905, xxxi.
3. Coze and Feltz: Gaz. méd. de Strasbourg, 1869.
4. Waldeyer: Arch. f. Gynec., 1872, iii, No. 2.
5. Bumm, E.: Ztschr. f. Geburtsh. u. Gynäk., 1895, xxxiii.
6. Nisot: Bull. Soc. belge de gynéc. et d'obst., Brus., viii.
7. Haultain, F. W. N.: Lancet, London, 1897, i.
8. Longyear, H. W.: Am. Jour. Obst., 1897, xxxvi.
9. Jacobs: Jour. d'anat., Dec. 12, 1897.
10. Williams, J. Whitridge: Am. Jour. Obst., 1898, xxxviii.
11. Clark: Boston Med. and Surg. Jour., 1898, No. 2.
12. Favre, A.: Ann. Soc. obst. de France, 1899.
13. Piassetzky, A.: Ejened. jour. Prakt. Med., 1900, vii.
14. Lop: Vull. Soc. d'obst., Paris, 1904, vii.
15. Orband: Allg. Wien. med. Ztg., 1906, ii.
16. Ungara, V.: Rassegna d'ostet. e ginec., 1906, xv; Centralbl. f. Gynäk., Jan. 18, 1908.
17. Raw: Jour. Obs. and Gynec., 1905, v.
18. Fitzgerald, Brit. Med. Jour., ii, 1895.
19. Hervieux: Gaz. d. hôp., 1866, xxxix.
20. Garrigues: New York Med. Jour., 1885, xlii, 354.

edema of the entire body, especially noticeable at the umbilicus and external genitalia. The umbilical cord was prolapsed and pulseless. Fetal heart tones and uterine souffle could not be heard. The position of the child was left occipito-anterior. The cervix was partially dilated. The patient was anesthetized and a craniotomy performed. The placenta was removed by expression, after which an intrauterine douche with sterile water was given. The fetus was a male, weighing ten pounds, was full term and not macerated. Two hours subsequent to delivery the patient had a severe convulsion, which lasted five minutes. This was followed in four hours by a second convulsion, which lasted three minutes. The patient became rational nine hours after delivery and did not again lose consciousness. At this time there were emesis, involuntary passage of feces, and incontinence of urine. The first specimen of urine was obtained by catheter at the time of admission. It contained albumin, blood and granular casts. The first twenty-four-hour specimen also contained the above, was acid in reaction, and had a specific gravity of 1018. The quantity of urine was small. On the first day there was a leucocytosis of 17,500.

Treatment.—The early treatment was directed against the nephritis. It was as follows: Potassium acetate, grains 15, every four hours; calomel, grains 5, followed by elaterin, grain 1/30, all in broken doses; sweats and rectal injections of physiologic salt solution with coffee. Four days after delivery the involuntary passage of feces and incontinence of urine ceased; the edema became greatly reduced, and the patient felt much improved. June 30 there was a slight chill, followed by emesis. July 2 the case was diagnosed and treated as "septic peritonitis," and the patient was transferred to the gynecologic service, when she came under my care. Vaginal smears were made, and these contained many bacilli, whose protoplasm stained unequally. No cocci were present. A slight membrane was visible in the vagina at this time. The patient was free from pain, but was restless and there was some twitching of the fingers. She had occasional emesis. Smears were again made on July 4, and the same irregularly staining bacilli were obtained from the vagina; these were not present in smears made from the uterine discharge. Cultures from the vagina were made on Loeffler's medium. In twenty-four hours there appeared colonies of the diphtheria bacillus. Smears showed the same bacillus, which were present in the vaginal secretion. Three thousand units of diphtheria antitoxin were administered, when the temperature fell from 40.1 C. (104.2 F.) to 39.4 C. (103 F.) by the following day. Three thousand units more were given and the temperature fell during twelve hours to 37.9 C. (100.3 F.). Forty-eight hours later the temperature was above 37.8 C. (100 F.), two thousand units were given and the temperature fell that evening to 37.2 C. (99 F.). During the next three days the temperature varied, reaching 38.5 C. (101.3 F.) the evening of the third day. The following morning 2,000 units more were injected and the temperature fell to 37 C. (98.6 F.) that night. It fluctuated slightly during the next three days, reaching 37.8 C. (100.1 F.), but fell to normal by the morning of the fourth day. The patient received in all 10,000 units of antitoxin.

July 6 vaginal examination was made under anesthesia and the following record made: "A dull-gray membrane, with slightly elevated margins, is seen just inside the introitus. It extends upward toward the cervix. The membrane is in the form of scattered patches, the largest of which lies to the right of the anterior column; the mucous membrane at the margins of each patch has an angry appearance; at one point near the vulva is an irregular gangrenous area. There is a dense membranous patch, one centimeter (⅜ in.) in diameter, on the anterior vaginal wall. When this is removed there is some oozing of blood from the denuded surface. Around the cervix is a dense membrane, and here, at the site of a recent cervical laceration, is also found a markedly gangrenous area."

Later History.—An intrauterine douche of sterile water was given at this time, but only a few fibrous threads came away; a single strip of iodoform gauze was inserted into the uterus. The tincture of the chlorid of iron was given in glycerin, and vaginal douches with protargol and Thiersch solutions employed. July 7 the pulse was weak and the patient was prostrated: she could move her limbs only with the greatest effort. A second intrauterine douche was given, and, as before, nothing came from the uterus. July 8 the condition of the vagina was much improved. The membrane was fast disappearing, and the marginal mucous membrane had lost its angry appearance. The pulse remained weak, and camphor in oil was given hypodermically, 2 grains every three hours. There was a slight discharge of blood from the vagina on July 9 and 11. The diphtheria bacillus had disappeared from the vagina by July 13, and the site of the former membranes now appeared like a very superficial erosion.

The patient made a slow and uneventful recovery, and was discharged in good condition August 7, seven weeks after admission. Cultures of the Klebs-Loeffler bacilli from this patient proved fatal to a guinea-pig, and pure cultures of the germ were then made from the animal, proving beyond all doubt the exact nature of the infection.

Foulerton and Bonney,[21] on investigating puerperal infections, state that in seven cases a diphtheroid bacillus was found in the uterus. The characteristics of the diphtheroid bacillus taken from two cases showed it to be morphologically undistinguishable from the *Bacillus diphtheriæ*, but that it otherwise presented the following points of distinction:

1. It did not produce any acid in glucose peptone broth after six days' incubation, at a temperature of 37 C. (98.6 F.).

2. It was non-pathogenic for the guinea-pig.

They found a "similar diphtheroid" bacillus in the cervical secretions of non-pregnant women, but it seems probable that in the two cases of puerperal fever in which it was found the organism was present in the pathogenic capacity. The bacillus described is possibly the same species as that found by Halle in the vagina, and believed by him to be the pseudodiphtheria bacillus of Weeks. They say further, "that it is on record that the *B. diphtheriæ* has been found several times in the uterus or in the vaginal lochia, but, so far as they can ascertain, the description of the bacillus found in these cases would apply to the 'diphtheroid' bacillus equally as well as to the true *B. diphtheriæ*."

In spite of these researches, and bearing in mind the excellent results obtained from the use of the antidiphtheria serum, where the bacillus diphtheria has been demonstrated by culture, I do not think it necessary to resort to the inoculation of a guinea-pig, except in those instances in which such a procedure is entirely feasible.

Most of the case reports show that active local antisepsis was instituted by means of the vaginal douche containing mercuric chlorid, iodin solutions, or other powerful agents. The general experience in the use of diphtheria antitoxin would seem to prove that these measures are unnecessary, a simple boric acid douche for cleansing purposes being the only thing required.

The diphtheria invasion does not seem to have any definite period after confinement for making its appearance, the time varying from the third to the twenty-sixth day. Pain in the genitals is apparently one of the prominent symptoms.

The membrane covering the genitals is grayish-white in color, with a red coloration around the edges. In all but one of the reported cases its appearance was accompanied by fever, ranging from 37.8 C. (100 F.) to 40 C. (104 F.), with a corresponding acceleration of the pulse.

All of the patients recovered in those cases in which the antitoxin was used. Every puerperal woman developing a fever, more especially where a membrane has made its appearance, should have a bacteriologic examination made from the genitals, and the variety of the infection classified.

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[21] Foulerton and Bonney: Lancet, London, 1905, i.

Welch, of Johns Hopkins, says: "The efficiency of the antitoxin treatment has passed beyond the experimental stage, and is settled beyond all doubt." The initial dose should not be below 1,500 units, if the infection is evidently a mild one. I believe, however, we would get quicker results if we were to commence with 3,000 units, to be repeated in six to eight hours, if no improvement is manifest. When enough of the serum has been given, the membrane shrivels, the pulse becomes stronger, the temperature falls, and the general condition of the patient is improved.

After the favorable experiences in the use of the diphtheria antitoxin serum in the cases reported, there is no doubt that in all patients suffering from diphtheritic puerperal infection, where the Klebs-Loeffler bacillus has been demonstrated, diphtheria antitoxin is a specific for the disease. Curettement, either with a sharp or dull curette, or with the finger, should be scrupulously avoided, as, the membrane being densely adherent, its removal results in leaving raw surfaces which serve as open avenues for the absorption of a greater amount of toxic material.

I wish to acknowledge my indebtedness to Dr. Charles P. Clark, for his painstaking attention to the details of the bacteriology of this case.

DISCUSSION.

Dr. A. Belcham Keyes, Chicago: Years ago I started in general practice. I have many records in my office of faucial diphtheria in which the temperature was absolutely normal and other cases with a temperature of 99.5 to 100 F. in the most malignant faucial diphtheria. Uterine diphtheria should not necessarily differ in this regard from the faucial: neither one presents any chill, there being a *schleichende*, creeping, insidious onset and only a moderate rise of temperature of, say, one or two degrees, unless there is mixed infection, when the temperature may reach 104 or 105 F. From the history of Dr. Cuthbertson's case I should say that this was a mixed infection. It seems to me that we should not wait for the culture in suspicious cases, whether mixed infection be present or not. I believe that this is a very important point. Diphtheria antitoxin should be injected first and the infection proved by the microscope afterward. I believe that a larger amount of antitoxin should have been used at once. Some years ago we gave smaller amounts. To day we give 10,000 units at once, without waiting; indeed, we may give large amounts like this to very small children. Therefore we should not hesitate in the case of a puerperal woman. A point of special interest in the paper relates to the carefulness with which the bacteriologic work was carried out. As Dr. Cuthbertson said, we have much data on puerperal fever as a general infection during the puerperium, but we have very few true data compared to the number of patients who have died of the actual bacteriologic infection of these cases. To treat them intelligently in the future I think we should be extremely careful concerning the bacteriologic findings.

Dr. A. Ernest Gallant, New York: The subject is one of great interest to those who see many cases in consultation and from the standpoint of the man who is not in the place where the bacteriologic examination can be quickly made. If we wait until the bacteriologic report comes to us, we shall have lost a golden opportunity. Some years ago, before the days of antitoxin, I was in an institution where there were 400 children, among whom there were a large number of diphtheritic cases. I saw various experiments and methods employed in treating the disease, and I could not help smiling when I remembered the plan told to my mother by a neighbor when we had diphtheria in the house. One child was ill with diphtheria and six had sore throats. A neighbor advised my mother to use powdered sulphur blown into the throat through a glass tube. The child not so treated died and the rest recovered without diphtheria. I have tried the same experiments in New York City, sending specimens to the Board of Health and having the report returned of diphtheria. After I applied the sulphur it was impossible to find a trace of the diphtheria bacilli. The point is, that in the case of membrane vaginitis, either postpartum or otherwise, I should not wait for the bacteriologic report, but would apply the powdered sulphur in this way. After that no bacteriologist could find any diphtheria germs. It is especially valuable, when using the sulphur, to insert a roll of gauze as a wick. The temperature usually returns to the normal within thirty-six hours. I recall one case in which the entire vagina was one cylinder of black exudate. The sulphur treatment was the only one carried out, and the next day the temperature was down to normal. The French use powdered sulphur in the treatment of diphtheria, and, in spite of our antitoxin treatment, their results are far superior to ours in the treatment of diphtheria and the sequelæ are very much less. I think that the method is an important one to bear in mind and one which can be carried out without difficulty. *I am not opposed to antitoxin treatment*, but think that it is well to apply the sulphur while waiting for the bacteriologic report.

Dr. William Cuthbertson, Chicago: The remarks of Dr. Keyes about the size of the dose of antitoxin are quite correct. We should have better results if we started with larger doses. In regard to the efficacy of sulphur mentioned by Dr. Gallant, I should feel much safer from the use of the antitoxin, although there is no harm in making topical applications of sulphur. It is well to start the antitoxin first and wait for the report of the culture afterward. We should make much more careful distinctions in the diagnosis of these cases than we have in the past, and by remembering that we would have much better results in puerperal infection. I have just had a case at St. Luke's Hospital in which there was a mixed infection, that of the streptococcus and the staphylococcus, and I summoned up nerve enough after receiving the bacteriologic report to treat the patient exclusively by means of the polyvalent serum of Marmorek. The patient entirely recovered through the use of the serum. If we will differentiate and use the serum that the bacteriologic report indicates, our mortality among puerperal women will be less in the future than it has been in the past.

GENITAL TUBERCULOSIS.*

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I wish to thank you for the invitation to address this section and assure you that I appreciate the honor.

Permit me to draw your attention to a group of diseases, which, I believe, has not received the attention it deserves, viz., tuberculosis of the genital organs. In fact, only twenty years ago the well known pioneer of gynecology, Hegar, of Freiburg, published his monograph on this particular form of genital disorders. At the meeting of the International Congress of Obstetricians and Gynecologists at Rome in 1902 it was proposed for discussion. Reviewing the literature we must confess however, that an astonishingly small number of observers have paid thorough attention to tuberculosis of the genital organs, including the peritoneum. This is all the more astonishing, as we know more about the tubercle bacillus than any other. From clinical observations we are not allowed to decide the possibility of its immigration by means of sexual intercourse. On the basis of experimental research by inoculation von Baumgarten denied an ascending infection, but Philip Jung has proved it beyond a doubt, at least in animals, by experiments in the laboratory of the gynecologic clinic at Greifswald. I agree that these cases make among women a very small minority of the cases of primary tuberculosis, though it seems to be important enough not to be forgotten.

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* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

In the large majority of cases the infection arises from other tuberculous deposits in the body—a secondary form—more frequently it seems to come from the alimentary tract rather than from the respiratory. In most instances, the bacillus may be brought down in the lymphatics or blood vessels, but we know that immigration does occur also by means of immediate contact. In more than two-thirds of our cases it came from the ovarian follicles to the Fallopian tubes; to the uterus in only one-third. It was also found in the corpus uteri. Localization in the cervix is very rare, still more than in the vagina.

Peritoneal infection was observed in the majority of cases. We could not ascertain this fact exactly, as we did not examine the peritoneum completely, the cases being clinical, not those of postmortem examination. The infection may occur at any age, but particularly during the menstruation and gestation periods.

Hegar, Freund and von Rosthorn called attention to the frequency of infantilism in these cases of genital tuberculosis. It is true that we meet infantilism, but I do not dare say what may be the connection.

An effort has been made to determine the frequency of genital tuberculosis by means of postmortem examination. Posner fixed it at 30 per cent.; von Hanseman at 5.4 per cent., figures undoubtedly incorrect, as postmortem examination only rarely extends to every gland, not every corpse being examined in all parts microscopically.

Fixing the frequency by the examination of the specimens removed by operations is unsatisfactory. If we do not examine every specimen, even when very slightly suspicious, we are likely to err. Another question under discussion is whether we are to diagnose tuberculosis when we see giant cells and epithelial tubercles, or must we see the bacillus? Many very good pathologists say the former. I believe that we must insist on the latter, as tubercles and giant cells are recognized also in other cases of irritation. Prof. Jung found that 24.6 per cent of the seriously affected adnexa of my Greifswald material were tuberculous (the bacillus being present) and this little city lies in the midst of a country which has been hitherto rather famous for its general healthfulness. If we should add to these cases those instances in which we met also with tubercles, the proportion would increase to a considerable amount. I am thoroughly convinced that when you examine your preparations with equal energy you all will feel astonished as to the frequency of tuberculosis of the genital organs.

We must acknowledge that tuberculosis of the genital organs is to be met with in about a quarter of those cases which require surgical interference when we base such interference on strict diagnosis and indication. In this connection we should be very precocious, indeed, to admit statistical numbers. Examining our cases with the same care, future meetings can only show us with some certainty the percentage of this form of tuberculous disease.

The clinical diagnosis in most instances is made with difficulty. In fact, the insignificancy of the symptoms is characteristic. Menstruation, in our material, was disturbed in only 55 per cent.; more or less aching feeling was complained of; many patients denied all such. Some complained of a reddish colored offensive discharge. They feel uncomfortable, weak, unable to work, lose flesh and show an unsatisfactory complexion. The sexual appetite not rarely seems to be increased. Not very rarely this disease arises from a well noted incident, puerperium, abortion, gonorrheal infection, local treatment. A severe cold we find related particularly in virgins and sterile women. In fact, seriously developed genital tuberculosis seems to exclude impregnation. There is no doubt that we find not very rarely tuberculosis of the placenta, particularly in case of general tuberculosis, which spreads to the ovum by the way of the blood. Sixty-six per cent. of our patients had never been pregnant. Thirty per cent. of the pregnancies occurred before tuberculosis manifested itself. One person in nineteen gave reasons to infer that she fell ill three weeks after confinement. Von Franqué believes that in one of his cases symptoms set in the second day after abortion.

Tuberculosis of other organs, heredity and contact with tuberculous people is very important for the diagnosis. The general condition of health, the slow development of the disease, the inefficiency of any treatment as to convalescence must be particularly looked at.

The diagnosis remains a very difficult task as long as we do not test for the bacillus either by means of biologic investigation or by microscopic examination of removed preparations. As to the former, Koch's test by tuberculin injection has been frequently applied. Many disapprove of it. According to my observation, I never met with any untoward effect, but I agree that only a marked positive reaction gives clear evidence. Tuberculin injections are not to be given in fever, and this is a somewhat disappointing complication.

The subconjunctival instillation of Pirquet-Calmette seems to give another means of specific examination. A more extended experience is to be waited for. Dr. E. Martin showed the peculiar value of this subconjunctival instillation in cases of pregnancy in tuberculous women. It is only too well known with what difficulties we meet in those cases when endeavoring to decide whether pregnancy is to be interfered with or not. A positive subconjunctival instillation proves, as E. Martin showed in more than two dozen cases, that such patients show a sufficient power for producing antibodies so that we may allow pregnancy to continue. A negative reaction proves the deep injury the disease has produced on the self-defending power of the pregnant patient, and interruption of the pregnancy is indicated at once. E. Martin's researches have been made in Prof. Bumm's clinic in Berlin, and it is hoped that they will be confirmed elsewhere. Hyperleucocytosis is of no special value in the diagnosis of tuberculosis.

Ulcers of the external parts up to the vaginal portion are suspected to be of tuberculous origin when their sloughing surfaces are indurated, where undermined borders resist local treatment and when they are tested not to be syphilitic. In such instances the microscopic examination of excised parts frequently requires much work. Only after examining about 100 slides do we sometimes find the bacillus. In some instances the ulcers of the vaginal portion show a very remarkable tendency to hypertrophy so as to form cauliflower outgrowths. These also can be determined only by careful microscopic examination. Enlarged glands with slight sensitiveness demand attention.

The peritoneum shows two remarkable kinds of reaction, exudative and sloughing, giving rise to the development of hard masses of considerable size. Both are the production of the same infection. We are still ignorant as to why the reaction sometimes takes one form and sometimes the other. This tuberculous peritonitis, particularly that of the exudative form, is met with with astonishing frequency in young girls who rarely show in the very beginning any localization in any other organ. We noted a peculiar variation in the frequency of its combination with genital tuberculosis. The sloughing form we met with in one-third of our cases and one-fifth of these were complicated by local infection of the adnexa. Two-thirds proved to be of the exudative form and one-half of these showed local infection of the genital organs.

The clinical diagnosis of peritoneal tuberculosis can be made with relative certainty in many instances. Ascites is always a suspicious symptom in the absence of neoplasms and diseases of heart, liver and kidney, particularly in young women. In advanced age carcinoma of the peritoneum also occurs. The clear straw color of such a fluid removed for diagnostic purposes indicates tuberculosis, while a bloody fluid indicates carcinoma. Hegar and Sellheim called attention to the pinhead-like prominences felt from the rectum or the vagina on the peritoneal layer as a sign of peritoneal tuberculosis. I have met with a rather remarkable number of exceptions to this.

The dry or sloughing form of peritonitis gives rise to the formation of hard masses which simulate neoplasms or inflammatory infection. The anamnesis must help as well as the localization of the tuberculosis in other organs. Especial attention is to be paid to careful examination of the genital organs by touch so as to determine their proper condition. In most instances the tuberculous masses show an abnormal location not connected with any organ of the peritoneal cavity. The observation of the general condition and the application of our diagnostic resources leave us to recognize the true nature of these masses.

The prognosis in all these cases is very grave. Healing depends on so many conditions, particularly on the possibility of constant care. We dare not forget that only too frequently besides these localizations which for the moment attract our attention, a latent localization may exist in other parts which escapes recognition. As to the prognosis of the especially diseased parts of the genital organs our means of attack are not yet powerful enough to allow us to give the prognosis as absolutely favorable. In any case we are not ensured against the outcropping of tuberculosis in any other part in the organs of respiration and digestion, bones, joints, skin and elsewhere.

As to the treatment. This is both general and local. I will speak only of the latter. Tuberculous ulcers of the vulva and vagina and of the endometrium can easily be removed. As to the latter, I prefer the application of strong astringents after curetting.

Particular attention is to be paid to those cases where we meet with a complicating gonorrhea and septic infection. These cases require special care, I think it is much better not to operate at once, but to interfere only when urgent indication sets in. The tuberculous diseases of the tubes and ovaries can be diagnosed definitely only after operation. Frequently, the special organs participating in the formation of these masses can be separated only by dissection. These organs, when they are destroyed by the tuberculous process, should be removed. Many surgeons advise removal of all the genital organs in these instances. I prefer to take away only what is so thoroughly diseased that healing seems to be excluded.

We are not allowed to speak of a radical treatment, as we do not know in every case whether there is tuberculosis in any remote organ, even in a latent form. That parts of the genital organs left in position after the removal of others can come to normal function is not to be doubted, as long as the blood vessels can be conserved and defects of the peritoneum covered by the neighboring parts. I apply drainage only in recent cases, that is to say, in the cases of a mixed infection of tuberculosis and sepsis or sapremia.

If possible I perform the operation by the vaginal route. Ascites I remove, as a rule, by free abdominal incision, through which I can reach its localization—occasionally only by the vaginal. The removal of big nodules and big sloughing masses seems to be useless, particularly when they are connected with the intestines. Experience taught me this precaution, as we are not sure in such instances whether we have to deal with an old intestinal fistula.

The results of this treatment I have been able to control in 53 patients, who suffered to some extent from disease of other organs. Three of these died after laparotomy, two from the development of colon bacteria infection from old intestinal fistula, the third patient at the postmortem examination proved to have a large tumor of the right kidney. Five others died from the pulmonary disease, the surgical intervention on the genital organs neither aggravating nor relieving the process. In 85 per cent. primary convalescence went on satisfactorily. Two of these cases showed recurrence of their ascites when they were dismissed after some weeks' treatment in the hospital.

Especial attention was paid to the after-treatment. The family, the physicians, and for our poor patients some charity institution, were warmly interested in the case and all instructed in the methods of modern phthisico-therapeutics. In some instances we met with remarkable benefits from guaiacol and creosote preparations.

As to the definite result Dr. B. Martin has examined for me 53 per cent. of these cases. Out of 27 patients observed, all after more than a year, 16 proved to be perfectly well. Two have not improved. Two died later of progressive tuberculosis, one from other causes, and six have been considerably improved. One of these, whom I could examine repeatedly, has gained 15 pounds and is very comfortable, at the last examination beginning endometritis was noted, but as there was only slight backache and a very moderate discharge she declined any treatment.

In comparing these results please remember that in every instance the tubercle bacillus was present. If I should add those cases in which the anamnesis and the local condition pointed to a genital tuberculosis, but in which this could not be proved positively the results would be much more favorable. This I observe particularly in my private patients, many of whom I have been able to control for long years.

Conservative operations were done whenever indicated.

Both the primary and secondary results were satisfactory and generally the menstrual function was conserved. Occasional amenorrhea and dysmenorrhea were easily supported because of the general improvement. Especially after the vaginal operation patients were free from pain and were able to do a certain amount of work and to enjoy life. They rapidly gained flesh. In those cases of complication of pregnancy and tuberculosis I interfered when the general condition sank in a notable degree. For the future I shall follow E. Martin's advice and depend on the result of the subconjunctival inoculation of Koch's tuberculin.

The operation did not prove unfavorable in any of these cases. The narcosis can be performed in a most convenient manner by lumbar anesthesia. Particular attention is to be paid to the loss of blood, to the disturbance of proper nutrition and to the necessity of keeping the patient in a quiet position in bed. In view of this, every operation was done only under a special and urgent indication when every other treatment failed to heal the disorders. Interference was done at once when fever was diagnosed in connection with septic or sapremic infection, including helpless cases in which, nevertheless, some relief was given by the operation. Genital tuberculosis formed nearly a quarter of the more serious cases of inflammatory disease.

Surgery was applied only to the diseased parts and the others were conserved. The result proves that such treatment benefits our patients, when supported by a proper general treatment.

Let me hope that the general interest in these cases will increase, and that future meetings will prove that my ideas are agreed to by the majority of my collaborators.

DISCUSSION.

Dr. H. J. Boldt, New York: Most cases of genital tuberculosis and tuberculosis of the peritoneum are of the ascending form, and in many of these instances the endometrium is diseased primarily. That can be ascertained, for in some cases where we remove tuberculous organs and curette the endometrium we find on careful examination a number of cells showing tubercle bacilli. With regard to the Fallopian tubes and ovaries, in about two-thirds of the cases, unless the disease has advanced too far, involving the pulmonary organs, we have a permanent cure by removal of the diseased adnexa. That so far has been my experience.

Dr. E. E. Montgomery, Philadelphia: The early stage of tuberculous disease of the peritoneum seems to be most amenable to treatment. The opening of the abdomen, even without the removal of any organs, often brings about conditions enabling the physician to restore the patient to health. I have seen this again and again in peritoneal tuberculosis. The great advantage is that we are made acquainted with the actual conditions and thus enabled to treat the patients from a hygienic standpoint.

Dr. Henry T. Byford, Chicago: We should not treat tuberculosis as a local disease. Surgery is not the whole treatment for it. When we have local disease of the lungs it is seldom surgery that does any good, and yet we know that the majority of cases of lung disease can be cured. In tuberculosis of the peritoneum all we need to do sometimes is to let out the fluid and treat the case medically. I have cured many cases without drawing off the fluid. I remember one case which for a couple of years apparently presented a brilliant cure, but some time afterward the patient went to pieces with tuberculosis. Had more attention been paid in this case to the after-treatment I have no doubt recovery would have been permanent. I believe that this part of the treatment rather than surgery should be emphasized.

Dr. D. Tod Gilliam, Columbus: Despite the growing tendency to minimize operative interference, excellent results are still to be had from operation in properly selected cases. From my own experience and observation I am convinced that the great majority of cases of tuberculosis of the genital tract are from above, and that a number of them, as Professor Martin intimated, come from some lesion of the alimentary canal. Fine particles of colored matter, such as cinnabar, let loose in the peritoneal cavity, are swept into the Fallopian tubes, and I have no doubt that an endometrial infection may result in this way. I believe that the ascending form is largely limited to the cervix, as there is usually a sharp line of demarcation between cervical and corporeal tuberculosis. Regarding the treatment of these cases I was a little surprised to hear Dr. Byford, for whom I have the most profound regard, say that genital tuberculosis is a general disease. I am willing to admit that in many cases the infection is much wider spread than the surface markings would indicate, and that in a proportion of such surgery is of no benefit, but, on the other hand, an attack on the center of infection will often result in prompt and permanent relief. How often will a widespread genital tuberculosis be arrested by the removal of the uterine appendages, and the removal of the cervix beyond the grossly diseased area arrest a cervical tuberculosis? I am persuaded from past experience that not a few of the supposed advanced cases of cancer of the cervix in which recurrence did not follow operation were in reality cases of cervical tuberculosis. The diagnosis of cancer, of course, could only come from slipshod methods, but slipshod methods are by no means exceptional, especially in the smaller general hospitals. In the widespread tuberculous infections of the peritoneum, in the absence of adhesions and especially if associated with peritoneal effusion, the brilliant results following section are so sudden and so conspicuous as to leave no doubt as to the efficiency of the operation. While I have long been of the opinion that too much was expected of operative interference in this class of cases in the past, I am equally convinced that the present-day tendency to taboo operations is ill judged and prejudicial. Professor Martin has shown us that genital tuberculosis is much more common than we had reason to believe.

Dr. G. Betton Massey, Philadelphia: We surely have a local disease to deal with in tuberculosis, with a reduced resistance of the general system. I suggest the inadvisability of curettage in the local deposits of this disease. It may be taken as a rule that curetting should not be practiced in any microbic disease if that disease be of a kind that can be sown into the cut surfaces.

Prof. August Martin, Berlin: This discussion is undoubtedly very difficult, for we do not all stand on the same basis. In all these cases the bacillus has been proved. That which entitled me to draw these conclusions was the clear clinical indications. Indeed, the diagnosis is a very difficult question, and only by the most careful examination at the time of operation can we find the same basis to stand on. If I should be permitted to meet you in a meeting, say ten years hence, I think we should all look on these cases from the same point of view. One of the gentlemen spoke of not applying the curette. I do not make a curettement without special indication. The treatment must be to a great extent a general one, and when Dr. Byford prefers medical treatment I absolutely agree with him. Whenever I can I send these patients to a milder climate. There is in Germany some difficulty in securing such care for poor people. While fighting for the admission of poor patients with tuberculosis of the genital organs to the hospitals treating patients with tuberculosis of the lungs I first began to publish my observations. If by proper general treatment these patients did not recover, surgical intervention was advised. From the fact that more than 24 per cent. of seriously injured genital organs partly or totally removed were found to be tuberculous it must be considered that my standpoint for surgical interference is a conservative one. The surgical interference I have pointed out is especially opposed to the radical treatment recommended by our French confrères at the congress in Rome. One may take out these parts altogether, but if one does not know whether there are any other glands in the body that are affected by and by one may have develop-

ment of the condition in some other part. So I think we should not speak about radical operation if we can only say that we took out all of that organ that was diseased. I think that by examining with the utmost care not only the mucous membranes, but every part not apparently suspicious, we shall find that tuberculosis is a frequent disease of the genital organs. Perhaps we can then agree on an improved way to fight this fearful and dangerous disease.

THE CONSERVATIVE SURGEON AND THE SYMPTOMLESS UTERINE FIBROID*

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From time to time various operators have shown that in a considerable percentage of cases of fibromyoma of the uterus there have been found complications which, in their opinion, would in time bring about a fatal termination. The existence of such complications has been brought forth as constituting an argument in favor of the removal on diagnosis of all fibromyomata regardless of whether the symptoms at the time of diagnosis were threatening or not.

It is of course a question as to whether a complication such as a cystic tumor of the ovary, for instance, coexistent with a fibromyoma, constitutes a reason for the removal of the latter any more than a fibromyoma constitutes a reason for the removal of a cystic tumor of the ovary. *Does or does not the fibromyoma itself* present probabilities, present and future, of such gravity as to warrant operation?

This paper is written for the purpose of emphasizing the fact that frequently there are found fibromyomata wherein there are conditions threatening the life of the patient, the existence of which conditions can not be determined and may not be suspected prior to operation, and in some instances not until microscopic examination has been made.

The various *degenerations* existing either at the time of examination or likely to exist later constitute a danger which should be forestalled. A certain element of the profession has been disposed to the belief that degenerations are not so common as others would have them to believe. However, only within the last few years has this subject been studied, and in view of the results of the investigators one must conclude that up to recent years degenerations were not found because they were not sought for.

Tracy[1] discusses this subject, taking as the basis of his article 3,561 cases reported by various operators. There was necrosis of the tumor in 197 cases, or 4.9 per cent.; myxomatous degeneration in 160, or 4 per cent.; hyaline degeneration in 72, or 1.8 per cent.; hyaline degeneration and calcareous infiltration in 12, or 0.3 per cent.; cystic degeneration in 141, or 3.5 per cent.; calcareous infiltration in 12, or 3.4 per cent.; carcinoma of the body of the uterus in 63, or 1.7 per cent.; sarcoma in 54, or 1.5 per cent., and various other degenerations, among which is carcinoma of the cervix, in 25 cases, or 0.7 per cent., and intraligamentous development of tumor, which latter conditions are not pertinent to the subject, carcinoma of the cervix and fibromyoma being rarely, if ever, more than coincident and intraligamentous development of tumor not being a degeneration.

That there is an etiologic relation between fibroma and cancer of the uterus is generally conceded. Strictly speaking, a fibroma does not undergo degeneration into carcinoma, but, as has been shown by numerous investigators, results from prolonged irritation of the epithelium elements of the remains of the Wolffian body.

Piquand,[2] tabulating the statistics of some seventeen authors, says that out of 3,231 cases of fibroma 96 were attended by *cancer (48 each of body and of neck)*, or thirty out of one thousand, or 3 per cent. On the other hand, he finds from the study of 136 cases that 25 per cent. of cases of cancer of the uterus are accompanied by fibroma. He says: "Cancer of the body appears to be, then, eight or nine times more frequent when there is a fibromatosis than when there is not, and it seems to us that we must justly conclude that fibromata predispose to cancer of the body of the uterus. Again, from the different statistics we find an average of seventeen cancers of the body to one hundred uterine neoplasms. Then, in a general way, cancer of the neck is at least five times more frequent than that of the body, while when there is present a fibroma, the number of cases of cancer of the neck and cancer of the body are about the same. Therefore, one may conclude that fibroma actually predisposes to cancer of the body."

In explaining how a fibroma favors the occurrence of a body cancer, he says: (1) Mechanical disturbances set up by the fibroma, degeneration of mucosa, displacements, etc. (2) Circulatory disturbances. Changes analogous to those of gestation are present, and the uterus is the seat of constant and prolonged irritation, and, therefore, a high degree of congestion and, therefore, a glandular endometritis is produced. (3) The chronic glandular endometritis by progressive transitions, due to continued irritation of the tumor, forms an atypical adenoma, and then carcinoma by regular and then irregular proliferation.

"Cancer of the uterine body," *he continues*, "is much more frequent in cases where there is a fibroid than in others; therefore, the fibroid predisposes to cancer of the body. Fibroma favors the occurrence of cancer in determining the lesions of hypertrophic metritis which are susceptible of being transformed into an epithelioma."

J. Bland-Sutton[3] finds that in a consecutive series of 500 cases of fibroids operated on, 63 of the patients were between 50 and 73 years old. Among these 63 women there were eight cases of cancer of the corporeal endometrium. He cites these cases to show that the combination of fibroids and cancer is most likely to occur between the ages of 50 and 60, as in his series only one cancer patient was over 60. When cancer of the body of the uterus occurs unassociated with fibroid, it has a wider age range.

One rarely reads an article on sarcoma of the uterus in which the rarity of this disease is not emphasized. This rarity is apparent, not real. In the last few years since this subject is undergoing investigation the proportion of sarcomatous degeneration is increasing because they are being found out. For instance, Dr. Howard C. Taylor[4] reports six cases of sarcoma of the uterus. Particularly interesting is Case IV of this series, as it illustrates the impracticability of differential diagnosis, as well as the treacherous character of these growths. In the case mentioned a tumor which at the time of admission reached to the margin of the ribs was first noticed on the left side, but later became median. The patient had lost considerable flesh and had constant abdominal pain. On Aug. 18, 1905, Dr. Taylor opened the abdomen and removed a tumor weighing about fourteen pounds, which was attached to the fundus of the uterus by a pedicle about one inch in diameter. The uterus was not removed, as the tumor was considered to be a fibroma.

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* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

[1] Surg. Gyn. and Obst., March, 1908, 246.

[2] Id., November, 1905, 465.

[3] Id., July, 1905, 88.

[4] Am. Jour. Obst., September, 1907, [illegible]

The pathologic report was small spindle-cell sarcoma. Seventeen days later, when the patient seemed in condition for a second operation, the uterus and one appendage were removed through the vagina. The vaginal route was selected, as the patient was not in good condition. The pathologic report on the uterus showed it to contain numerous sarcomatous foci.

There is little force in the argument that the so-called sarcomatous degenerations are really not degenerations and were sarcomatous in the beginning. This proves nothing against removal of the uterus. Certainly no one would attempt to make a differential diagnosis before removal, and so far as the writer's observation is concerned, the development of sarcoma or of sarcomatous degeneration is quite as insidious and ofttimes as symptomless as the fibromyoma.

The most interesting and important degeneration noted in the statistics tabulated by Tracy[1] was necrosis, of which there were 197 cases, or nearly 5 per cent. Necrosis constitutes the most dangerous degeneration with which we have to deal. None can say that necrosis may not exist throughout a long period of time and produce no threatening symptoms, although it is the observation of all of those who do practical work along this line that this process is very treacherous and that patients apparently in the best of health are suddenly stricken down by a sudden exacerbation in the necrotic process. Then it is that we must operate ofttimes on a patient *in extremis*, whose every tissue is so invaded by the poison that removal of a tumor only serves to eliminate the original focus of infection and leaves the system so overwhelmed that the results are fearful.

Including carcinomatous, sarcomatous, necrotic and myxomatous degeneration, we have 12.1 per cent. of degenerations of which it may be said that (1) they are conditions which, if not removed, will at least in all probability terminate fatally; (2) if not removed, such developments will occur as will render subsequent surgical procedure much more difficult and less productive of satisfactory results, and (3) these conditions are such that in the majority of cases could exist unknown and even unsuspected by the examiner.

What, then, is to be done about it? To me it has been a thing unfathomable why it is that those who are pleased to call themselves conservatists demand a special dispensation for fibromyomata. Many a small cystic tumor of the ovary exists without symptoms and is only discovered by accident. In all other parts of the body we remove new growths which are benign; remove many of them which at the present time threaten nothing, not even inconvenience, simply because they may undergo malignant degeneration. Do the conservatists remove such growths? So far as I am able to learn, they do. Not because its condition is at present alarming, but because of what it may become. Many a case of chronic appendicitis goes on to apparent recovery. Do the conservatists advise that this appendix be let alone? Not at all; they advise its removal because the patient may have a recurrent attack.

If the conservative surgeon in palpating an abdomen without suspicion of the existence of gallstones should find such stones, would he advise against their removal? Not at all. He would advise their removal, because he knows that gallstones may later become a source of trouble and predispose to cancer of the gall bladder. Take a lipoma, for instance. Certainly there is no more innocent form of tumor, and how many of these escape the surgeon's knife, once he has seen them? Only those occurring in patients who positively refuse operation. And yet statistics show that over 12 per cent. of fibromyomata show conditions which, if allowed to persist would bring about results far more to be dreaded than those coming from a cystic ovary, a chronically inflamed appendix, gallstones or a lipoma.

There are those who make a plea for the conservation of these fibromyomata, particularly those occurring in young women who are anxious to bear children. Certainly the prospect for children in the case of a young woman with a fibromyoma is not a very bright one. Under such conditions ten women will abort or miscarry where one will carry a child to full term, and even where the pregnancy goes to full term the dangers are such as to make very few of us willing to risk such a state of affairs, particularly when it comes close home to us, and it certainly becomes a matter of ethics as to which horn of the dilemma we are to take.

Naturally it devolves on such men as sit in this section to brush away the fallacious ideas which exist among a certain element of the profession and the laity. The idea which has cost as many lives as any other is the one that the menopause offers a certain and safe cure to all the diseases to which woman is heir. We hear that at the menopause these fibromyomata shrink up and cease to cause any trouble. Certainly the percentage must be very small, and to offset this percentage we know that 64.9 per cent. of degenerations occur after the age of forty years.

It is hard to realize in this day of advanced and intelligent surgery that men of unquestioned standing will delay these operations, trusting to good luck or the menopause to do away with the symptoms of which these women complain. According to my observation, so far as the menopause is concerned, it aggravates rather than improves the symptoms in at least half the cases. The idea of the menopause curing such a thing as fibromyoma is a relic of the surgical dark ages, and admitting the bare possibility of such a thing occurring, the chance is so small that it should not be taken by the intelligent, modern operator.

In this connection, J. Bland-Sutton[5] has been frequently quoted, and what he says ought to be read and studied by every woman who hangs to this will-o'-the-wisp in the hope of relief from a fibromyoma. He says: "Surely there is nothing in the whole range of surgery more ironical than a woman spending twenty or even thirty years of her life as a chronic invalid on account of a uterine fibroid, in the expectation that at the menopause she will be restored to health and begin a new life, and then to realize that far from this being fulfilled, the fibroid becomes necrotic, extruded or septic, and places her life in the gravest peril, and that she may die in spite of surgical intervention."

The teaching that it is well to advise patients having fibromyomata giving rise to no symptoms to return from

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5. Lancet-Clinic, June 6, 1903.

time to time, is weak in theory and bad in practice. This advice is just what the woman who shuns an operation wants. Where one will return, ten will never be seen again until some radical pathologic process has developed which will greatly diminish the patient's chance for recovery from an operation delayed without reason. I was myself in the habit of advising the patient with the so-called innocent fibromyoma to return from time to time. The death of two such patients from an overwhelming necrosis convinced me of the mistake.

With the mortality of ten years ago, the advocacy of the removal of all fibromyomata on diagnosis might have been questionable, but with a mortality of 6 per cent. or even less in operations performed by competent men, a certain portion of which, it is reasonable to presume, occurred in cases where an earlier operation would have given different results, and with 12 to 14 per cent. of cases showing degenerations threatening death if neglected, it seems that the radical view taken in this paper is the one which, if maintained, will be the means of relieving many a woman from a life of invalidism or from death.

DISCUSSION

Dr. H. J. Boldt, New York: It is doubtful to my mind whether these sarcomas of the uterus are degenerated fibromas or have been sarcomas from the beginning. There is no proof at all to convince me that the tumors have not been of a malignant type from the beginning. In operating on cystic ovaries conservative surgeons retain as much ovarian tissue as apparently is normal. I believe that every woman who has a myofibroma causing symptoms should be advised to have the tumor removed.

But I am absolutely opposed to removing a woman's uterus when there is nothing to indicate whether it is the seat of myoma or not. There are women who will absolutely decline to have an operation. I have watched some of these women for fifteen or twenty years and have a number under observation now. Such tumors sometimes retrograde and become smaller long years after they had first been diagnosed. I know from personal observation that they atrophy and shrink. I would not say, however, that it was a proper thing to have the patients advised against surgical intervention.

Dr. Hugo O. Pantzer, Indianapolis: I do not wish to detract from the force of the argument made for the removal of uterine myomata, but some of the adverse evidence should be presented. The fatality and morbidity which follows such work by expert operators in well-appointed clinics should be additionally stated, if not the untoward results following the work of less experienced surgeons. The incidents by infection, by anesthetics, by idiosyncrasy, by unexpected complications and sequelæ certainly justify and demand a discriminating and differential course in these cases.

Dr. F. F. Lawrence, Columbus: It is strange that there should seem to be any necessity for discussing the advisability of removing any neoplasm from the body except possibly in cases in which operation is absolutely impossible. The dangers of operation before complications occur are almost *nil* in hysterectomy. Noble and others have shown that the danger of malignant degeneration in fibroids is much beyond 5 per cent. The question is not simply one of malignancy. What are the dangers of suppuration of fibroids left alone? Another 5 or more than 5 per cent. Particularly is that true when these fibroids are made the subject of local treatment.

What about the resistance of the patient when she is allowed to go on with a fibroid? A patient carrying a fibroid for six or eight years is reduced in every way.

What can be gained by the expectant treatment? Some years ago we were told that we must not remove an ovarian cyst until it became as big as a wash-tub. Some years ago we were taught that a fibroid should not be removed until after the menopause and patients had to go on to a necrotic condition of the growths with a mortality at the time of operation of 35 per cent. To-day the mortality in operation is less than 3 per cent. This difference is due to teaching such as Dr. Eastman's advocating the removal of every neoplasm, no matter where situated, as soon as it is discovered.

Dr. J. H. Carstens, Detroit: There is something to be said about symptomless fibroids. How do you ever find the fibroids? The patient has some symptom before she consults a physician. There is no doubt that many women are going about with symptomless fibroids. When they finally come to the physician there are symptoms and the tumor should be removed.

There are some fibroids, however, that do not produce symptoms and the question is simply, what will you do? What do you call symptoms? Are there not other symptoms than pain? Does not the patient suffer in the consciousness that she has a fibroid that will cause her trouble? Is she symptomless when she goes around for a year or more dreading lest something will happen? Is it not a *good* thing to remove that fibroid when the danger is *nil*, not 6 per cent., when you often can do it by the vaginal method or by simply enucleating the fibroid and leaving the uterus intact and the woman in good health?

I think that we ought to relieve a woman and remove the fibroid whether or not it is degenerated. There is mortality in the very cases that are called symptomless but are allowed to drag along year after year until they are almost *in articulo mortis*, and then the patients present themselves for operation and the mortality statistics are not good. Is it not better on general principles to remove the fibroid and relieve the woman, not necessarily to-day or to-morrow, but as soon as possible, in two or three months, when the woman is in the best condition?

Dr. T. B. Eastman, Indianapolis: The *reductio ad absurdum* argument has been applied to this question. Some one asks why we do not remove the uterus for fear of carcinoma. I answer for the simple reason that the conditions are not pathologic. We advocate the removal of fibroid tumors because they are pathologic, and that is sufficient reason. Now there is one thing which those who are pleased to call themselves conservatives never have explained in any discussion on this subject, and that is why in the world they demand a special dispensation for fibromyomata. They take out a cystic ovary or the appendix on the slightest suspicion. If they can show any reason why they should have this special dispensation I have nothing to say.

METABOLISM IN TYPHOID FEVER.*

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I shall not attempt to review the many-sided subject of metabolism in typhoid fever, but shall devote the time to a brief discussion of one phase of the subject, which is of great importance, as well as of interest, both to the clinician and to the pathologic physiologist.

During the course of the disease a typhoid patient loses from ten to sixty pounds or even more of his body tissue. This loss is divided among water, subcutaneous fat and protein from the body fluids or cells. The loss of water we may leave out of consideration because we know neither its amount or significance. Since the observation of Leyden[1] in 1869 it has been believed that there is a retention rather than a loss of water from the body in fever. This belief is supported by the decreased quantity of urine and by the supposed decrease in the evaporation from the skin; but few or no accurate data on this question are available, and no positive statements concerning it can be made.

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* Read in the Joint Meeting of the Section on Practice of Medicine and the Section on Pathology and Physiology of the American Medical Association, at the Fifty-ninth Annual Session, at Chicago, June, 1908.

1. Arch. f. klin. Med., 1869, v, 66.

The burning of body fat may, in the absence of carbohydrates, and perhaps also other conditions, lead to varying degrees of acidosis, with an abstraction of alkalis from the tissues, and possibly in other ways may be of distinct harm to the patient. This is borne out by the clinical observation that fat individuals are comparatively poor subjects for typhoid fever; or for that matter, for any infectious fever or for surgical operations. We have, however, as yet no good reason for believing that the metabolism of fat in fever is in any way different qualitatively from that in other conditions of undernutrition; and it seems to me probable that the excretion of the acetone bodies occasionally recorded in typhoid fever is merely the result of a burning of body fat in the absence of sufficient carbohydrates—the frequently observed starvation acidosis. If this is true, acetone, diacetic and beta-oxybutyric acids will not be excreted by the typhoid patient who receives an abundance of carbohydrates. Aside from the production of organic acids in the burning of body fats, the mere loss of fat is probably of no great consequence.

In addition to the loss of body fat there is a great loss of body protein in typhoid fever, and this is what I shall speak of in some detail. Many data are to be found in the literature as examples of the amount of this loss of protein. In a case reported by Leyden and Klemperer[2] there was a loss of 109 gm. of nitrogen, the equivalent of 3.2 kilos or seven pounds of pure muscle tissue in twelve days. In a case of Frederick Müller[3] there was a loss of 86.4 gm. of nitrogen, the equivalent of 2.5 kilos or five and one-half pounds of muscle tissue in eight days. These are not very unusual figures; a loss of the equivalent of even one and one-half pounds of muscle tissue in a single day is not very rare. There are many reasons for believing that this febrile loss of protein from the body is a serious and dangerous proceeding. The emaciation, muscular weakness and decreased resistance, and the long convalescence are certainly in part the results of the loss of body protein. The amount of protein lost appears to bear a close relation to the severity of the disease, and Ewing believes that the pathologic processes concerned in the metabolism of this body protein take a prominent part in determining the patient's condition. Ewing's[4] idea is that many of the phenomena of typhoid fever, especially in the severe and fatal cases, are due to an autointoxication resulting from the "burning of thirty pounds of body tissue in three weeks"—and not directly to the endotoxins of typhoid bacilli. This idea is to some extent supported by the fact that the so-called nitrogen partition of the urine in severe or fatal cases is decidedly abnormal, and similar to those found by Wolf, Ewing and others in toxemia of pregnancy. Furthermore there are severe so-called toxic cases of typhoid fever which terminate with acute yellow atrophy of the liver, a condition which appears to be closely associated with a particular type of faulty protein metabolism. But aside from the possibility of its creating an autointoxication, the consumption and loss of body protein must be of great harm to the patient, both during the disease and during convalescence.

The causes for this loss of body protein are apparently three in number.

The first is partial starvation. An individual is obviously undernourished unless he absorbs from the digestive tract food of sufficient caloric value to equal the energy expended. Except by very difficult and accurate measurements it is impossible to know the amount of energy being expended by a particular patient, and few such measurements have been made on fever patients; but we may readily calculate average figures which are satisfactory for practical purposes.

At ordinary rest the heat and other energy expended by a normal individual receiving sufficient food is about thirty-three calories per kilo body weight. In fever there is an increased heat production, with an average, according to Krehl, of 20 to 30 per cent. Twenty-five per cent. added to the thirty-three calories gives about forty calories, or, for a patient weighing seventy kilograms, or 150 pounds, 2,800 calories. This represents the minimum amount of energy which the average typhoid patient is expending in each twenty-four hours. If he does not receive food equivalent to this amount of energy he merely draws on his body tissues to make up for the deficit. Few or no typhoid patients receive enough food to maintain an equilibrium, and they consequently burn up for fuel varying amounts of their body fat and protein.

Any physician can readily calculate the probable deficit with the diets he uses. The deficit in calories is usually about 50 per cent., and this, according to von Noorden's figures,[5] may be responsible for loss of 2 to 3 gm. of body nitrogen per day.

The two other causes for the febrile loss of body protein are the pyrexia and the action of the bacterial toxins. From the experiments of Linser and Schmidt,[6] Fritz Voit[7] and Schleich,[8] we know that artificially raising the body temperature causes an increase in protein metabolism. The pyrexia itself is therefore one of the causes for the loss of body protein; but the loss due to this cause can be prevented, just as the loss due to partial starvation, by the intake of sufficient food.

The third factor is the so-called "toxic" destruction of body protein from the poisonous action of the bacterial toxins on the body protein. This last factor is still open to discussion, but I am inclined to the belief that some such action does take part. It is, however, at present impossible to discuss the toxic destruction apart from the result of the pyrexia, because we can not distinguish between the two when both are present, as they usually are in typhoid. The question which is of importance for the practical treatment of typhoid is, can the combined effect of the pyrexia and the bacterial toxins be prevented from causing a loss of body-protein? There are already some encouraging answers to this question. May,[9] working with rabbits infected with pig erysipelas, was able to decrease the febrile loss of body protein by carbohydrates; though May later doubted the correctness of his first interpretation. Puritz[10] worked on human typhoid in St. Petersburg, and his results led him to favor a liberal diet in this disease. His diets, however, were rich in protein and of only moderate caloric value, and were therefore, I believe, not well adapted for his purpose, which was to retard the loss of protein. Weber,[11] working with a sheep inoculated with an extract of glanders bacilli, was able wholly to prevent any febrile loss of body protein by giving the animal a liberal diet containing much carbohydrate. Leyden and Klemperer, on the other hand, conclude from their experiments on typhoid and pneumonia that, while a liberal diet is desirable, it is not possible to prevent the febrile loss of protein; this view is generally accepted.

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[2] Von Leyden: Handbuch der Ernährungstherapie, 1904, II.

[3] Cong. f. inn. Med., 1902, p. 192.

[4] Proc. Path. Soc. Philadelphia, 1905; paper before New York Acad. Med., New York Med. Rec., 1907, p. 537.

[5] Handbuch der Pathologie des Stoffwechsels, 1906, i, 497.

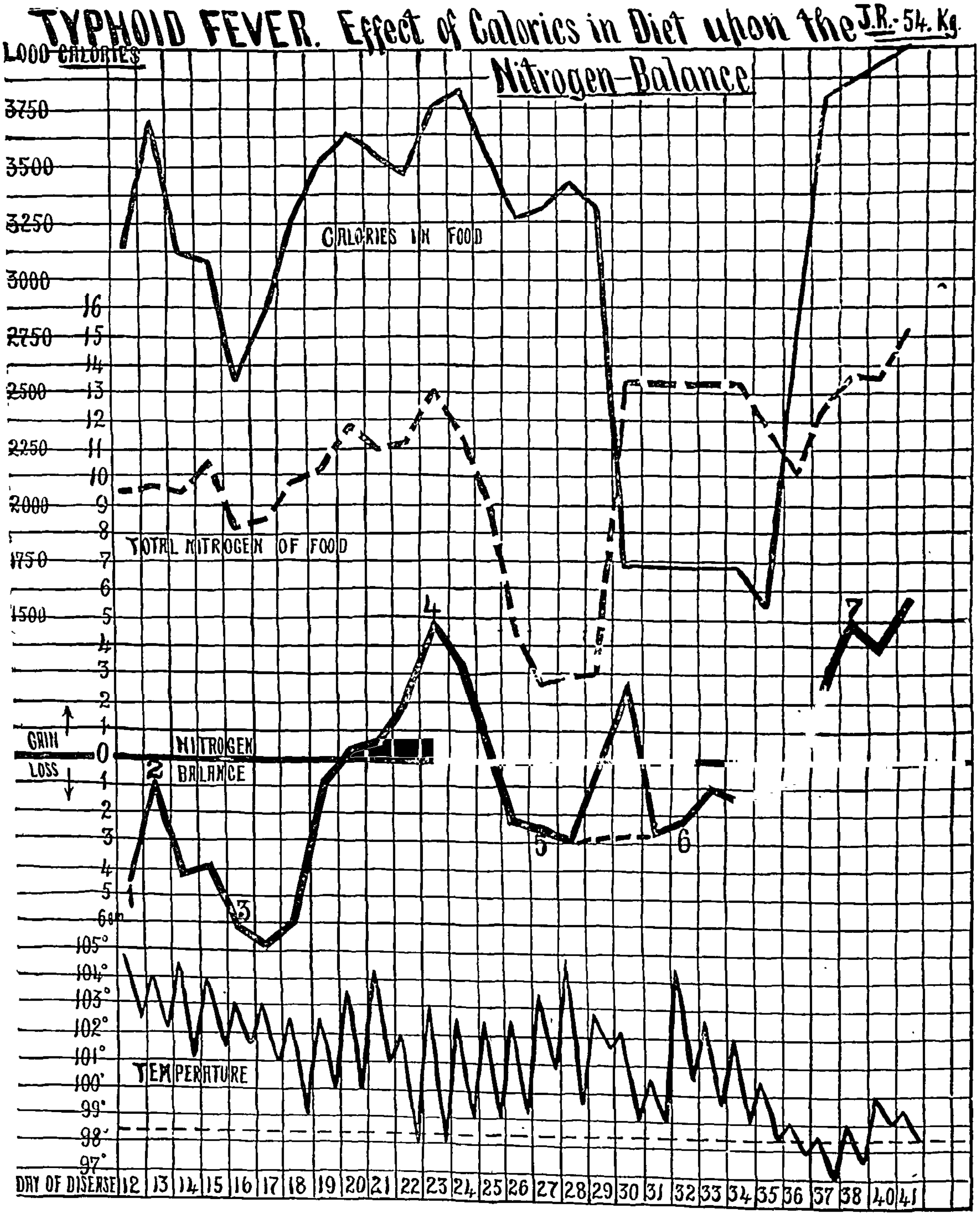
[6] Arch. f. klin. Med., lxxix, 514.

[7] Sitzungsb. d. Gesellsch. f. Morphol. u. Physiol. in München, 1895, No. 2.

[8] Arch. f. exp. Pathol. u. Pharmakol., lv, 82.

[9] Ztschr. f. Biol., 1894, xxx, 1.

[10] Virchows Arch. f. Path. Anat., 1893, cxxxi, 327.



Last summer Dr. Warren Coleman and I undertook in Bellevue Hospital, New York, a further study of the extent to which the loss of body protein in typhoid fever might be retarded by dietetic means.[12] Our results were on the whole very encouraging, in that we were able to diminish the loss of body nitrogen to a comparatively small amount during the fastigial temperature and were able to make patients gain body protein during the steep curve period of the disease.

I need not here go fully into the reasons underlying our choice of diet, which is the opposite of that used by Puritz, and indeed the opposite, in some particulars, of the diets at present used in typhoid fever by most physicians. Our principle has been to have the diet contain a moderate amount of protein and the largest possible amount of carbohydrate. The reasons for choosing carbohydrates as the basis of the diets were briefly as follows: Carbohydrates are the strongest sparers of body protein in health, according to Voit, Lusk, Folin and others; and the experiments of May, Weber and Linser and Schmidt indicate that this sparing action takes place in fever as it does in health.

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[11] Arch. f. exper. Path., xlvii, 10.

[12] We are indebted to Dr. Armstrong, medical superintendent of Bellevue Hospital, for placing the facilities of the hospital at our disposal. The experiments will be published elsewhere in detail.

A large amount of fat is objectionable because of its tendency toward digestive disturbances and diarrhea; and the protein should be kept at the minimum effective amount because of its action in increasing the heat production (Rubner) and because of the large amount of work it throws on the intestine and the kidneys. The results from one of our cases are given in the accompanying chart. *Samples of the diets used are given* in the table.

TABLE OF COMPOSITION OF FOOD DURING EXPERIMENT SHOWN IN CHART.

The numbers at the left refer to corresponding numbers on the "nitrogen balance" curve in chart.

		Gm.	Calories.	Per Cent. Total Calories.	Calories Per Kg. Body Wt.
1.	Protein..................	60	245	7.8	
	Fat.....................	80	745	23.7	
	Carbohydrate.........	525	2150	68.5	
			3140		58.
2.	Protein..............	56	230	6.2	
	Fat.....................	78	725	19.5	
	Carbohydrate.........	670	2750	74.3	
			3705		69.
3.	Protein..............	53	217	8.7	
	Fat.....................	63	585	23.6	
	Carbohydrate........	410	1680	67.7	
			2482		46.
4.	Protein..............	75.5	310	8.2	
	Fat.....................	120.4	1120	29.8	
	Carbohydrate........	569	2330	62.0	
			3760		70.
5.	Protein.................	16.2	66	2.0	
	Fat.....................	108	1004	30.3	
	Carbohydrate.........	547	2240	67.7	
			3310		62.
6.	Protein..............	84	345	20.0	
	Fat....................	96	893	51.7	
	Carbohydrate.........	120	490	28.3	
			1728		32.
7.	Protein................	85	349	8.8	
	Fat.....................	122	1234	28.7	
	Carbohydrate.........	583	2390	62.5	
	Alcohol..............		80		
			3953		73.

Our results with other cases show essentially the same thing, although in some cases there was no gain, but a continued slight loss of one gram or so per day. On the high caloric diets, however, the patients were almost always in a condition not far from nitrogen equilibrium.

Our results show, we believe, that the febrile loss of body protein, including the result of the three factors, undernutrition, pyrexia and the action of toxins, may be retarded and even wholly prevented, or compensated for. But the results show likewise how difficult this is to accomplish. It was only when we gave sixty to seventy or even eighty calories per kilogram—between 3,000 and 4,000 calories—that the greatest sparing was observed.

The important point is, however, that it is possible to give typhoid patients such liberal diets without, so far as our experience shows, producing any harmful results, but, we believe, with decided benefit.

Having learned that it is possible to retard the febrile loss of body protein, we have still to decide whether it is desirable to do so in typhoid fever.

There are many objections, some apparent and others real, and many formidable difficulties; but I know of no reason why we should not attempt to do all in this direction that the circumstances will allow. Among the possible objections to liberal feeding in typhoid is the commonly supposed digestive limitation of these patients. The digestion in typhoid fever undoubtedly has its limitations, but they are not such as to prevent the proper absorbtion of amply sufficient food if given in the proper form. The experiments of von Hoesslin,[13] Leyden and Klemperer,[12] *Puritz,*[10] *Folin*[14] and others show very positively that the average typhoid patient absorbs food from his intestine almost as completely as does the healthy individual. Only in the severest cases is the absorption very materially decreased. In the average case without profuse diarrhea the digestion of protein, fat and carbohydrate is within 10 or 15 per cent. of the normal. Folin,[14] in his recent work on typhoid, has directly determined the degree of absorption of carbohydrates and has found it practically normal.

What seems to me an objection to liberal feeding in typhoid fever is the effect of the protein in increasing the heat production. Rubner[15] has shown how a strict protein diet in a dog may increase the heat production more than 50 per cent. The effect in a human patient could never be so great, but with the decreased heat loss in fever it is quite possible that this factor may be of considerable importance. This objection does not hold against the diets Coleman and I have used, but may apply to the high protein diets used by others. Carbohydrates have only a very slight effect in increasing heat production.

The objection has been raised to the use of large quantities of carbohydrates, from the fear of fermentation and tympanites. I can only say that we have had no such experiences with the use of milk sugar or starch.

The greatest practical difficulty that we have so far encountered in this work is the choice of food products. After trying or considering various carbohydrates we have used milk sugar almost wholly. This has the advantage of fermenting only with difficulty and of being less sweet than cane sugar and much more soluble than any form of starch. Milk, diluted cream, and eggs have been used to furnish protein and fat. Cocoa, lemon juice, tea, coffee and other things have been used as flavoring agents and as vehicles for milk sugar.

The patients did not object to our diets more than to milk alone, but some persuasion was frequently necessary to get them to take the amounts of food found to be necessary for our purposes.

The full advantages as well as the possible objections to our dietetic plan have still to be demonstrated; but there are a few reasons in favor of such liberal nourishment for typhoid patients which are worthy of consideration at this time.

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[13] Virchows Arch. f. Path. Anat., 1882, lxxxix, 317.
[14] Unpublished experiments.
[15] Rubner: Die Gesetze des Energieverbrauchs, 1902.

As I pointed out earlier, the average typhoid patient receives at present 50 per cent. or less of his energy requirement. This is half starvation; and we know that starvation is harmful even in health, in that it leads to weakness and to an increased susceptibility to many infectious diseases. If starvation is harmful in health why should it be beneficial in typhoid fever? During the course of typhoid fever great demands are constantly being made on the defensive power of the organism; and it certainly does not seem probable that the patient will be as well prepared to meet those demands when in a starved or half-starved conditions as when he is being supplied with sufficient energy in the form of food.

It is a common laboratory observation that strong, robust, well-fed animals develop the strongest artificial immunity; and it seems fair to believe that we are assisting the patient to acquire his immunity to typhoid fever by keeping his nutrition at the highest possible level. Is it not possible that one of the factors determining the outcome of the disease may be the state of nutrition in which the body cells are maintained? Retarding the loss of body protein should leave the patient at the end of the fever in better physical condition and so make possible a shorter convalescence.

This sort of reasoning is, however, largely speculative; and long experience alone can tell the true value of such treatment. We can merely say at present that it is possible by the means already outlined to retard and even to prevent the febrile loss of body protein.

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DISCUSSION.

Dr. Lawrence Litchfield, Pittsburg: During last summer I spent a great deal of time reading all I could find in the Surgeon General's Library on metabolism in typhoid, and from the crude experiments of Leyden, published in 1869, attempts made by increased feeding to prevent or control the loss of weight during the course of the fever, through the work of von Hösslin, whose classic article was published in 1882, and the excellent work of von Leyden, Klemperer and others down to that of Lüthje, who published in 1902 the report of his successful attempts to establish a plus nitrogen balance during the period of steep curve, though with very high proteid feeding, this work of Drs. Shaffer and Coleman is unquestionably the best that has been done on the metabolism of typhoid up to the present time.

THE BACTERIOLOGIC DIAGNOSIS OF TYPHOID FEVER.*

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Since the introduction of modern laboratory aids in the recognition of typhoid fever the problem which has presented itself to practitioners of medicine is that of more accurate and earlier diagnosis. The demand for a scientifically accurate diagnosis is the outcome of the realization that clinical typhoid fever is a disease which may be caused by any one of several bacteria. The physician of the present day is no longer satisfied with the old term "enteric fever." He tries, so far as possible, to supplement his clinical diagnosis by an accurate bacteriologic diagnosis. The establishment of the bacteriologic diagnosis is only to be accomplished by the isolation of the specific organism infecting the individual patient.

From a practical standpoint the question of early diagnosis is of much greater importance than that of absolutely accurate diagnosis. To the individual patient early diagnosis in typhoid means better treatment, better nursing, perhaps more adequate domestic arrangements, and often a great saving of strength during the first stages of the disease. Moreover, if we are to have any specific method of treating typhoid, its value will probably depend to a great extent on the time at which its use is begun. In the sphere of preventive medicine the problem of the early diagnosis of typhoid has lately assumed enormous proportions. That the typhoid patient is a source of danger to the community during his sickness has long been recognized. That he may continue to disseminate the bacilli for months and years after his convalescence is now becoming a well-known fact. That he may, and doubtless often does, spread the contagion even before he shows any clinical symptoms of the disease, that the disease is infectious during the incubation period, has, however, only recently been proved. Conradi,[1] in a striking article, has demonstrated that the typhoid bacillus can be isolated from the blood of an apparently healthy individual, and has shown that in eighty-five cases of so-called "contact infection" the infection occurred in 58 per cent. of the cases during the first week. In the fight to limit the spread of typhoid fever the task of isolating and controlling the late dangerous cases, the chronic bacilli carriers, falls to a great extent on the public health authorities. The detection of the early bearers of contagion must, however, be the duty of the individual practitioner.

Although the bacillus of typhoid fever may be isolated from various sources, the only methods which have proved themselves to be of considerable value are the examinations of the urine, the stools and the blood. The first of these—the urine—has never come into special prominence as a routine procedure. The organisms can be isolated from the urine in about 25 per cent. of the cases, and often early in the disease; but this percentage of favorable results is hardly sufficient to warrant the method being used very extensively.

The examination of the stools as a diagnostic measure in typhoid appeared at one time to have a brilliant future. The conception of the disease as an intestinal infection went hand in hand with the idea that the dejecta swarmed with typhoid bacilli. The first difficulty encountered was the necessity of differentiating the typhoid from the colon bacillus. In answer to this need there was brought forward a long series of special culture media on which these organisms could be distinguished from one another with more or less accuracy. Some of these media were difficult to use, others comparatively simple. All of these methods, however, for their success depend on being used by skilled bacteriologists; and even so, the results obtained by them have not, on the whole, been favorable. In the hands of some observers they have done well, and there are many series of cases in which the bacilli have been isolated from a large percentage of the stools. Other equally good workers have failed to confirm these results and have only been able to find them in a comparatively small proportion of their cases. The conflicting reports as to the frequency of the presence of the bacilli in the feces are, however, at least partially explained in the light of our present knowledge of the disease. If, instead of regarding typhoid as a primary intestinal infection, we regard it as a primary septicemia, which usually has secondary intestinal lesions, with a secondary infection of the gall bladder, the uncertainty of finding the organisms in the stools is more easily accounted for. There is good reason to believe that the intestine and its contents form a very poor culture medium for the typhoid bacillus, for autopsy may show a gall bladder with bile so infected with typhoid bacilli that a single drop will give hundreds of colonies, while cultures from just below the ampulla of Vater, and from the intestinal contents at different points down to the cecum, will not show the presence of a single typhoid colony. It is possible, on the other hand, that the organisms growing in the gall bladder from time to time may be discharged into the intestine in such large numbers that many of them survive the passage of the intestine and may be isolated from the feces. It is a clinical fact that many negative examinations in a case may be followed finally by a positive examination, thus making the element of luck a prominent factor in the value of the process. The different results obtained by various observers may be accounted for also in some degree by the viability of the special race of organisms infecting the case. It is probable that some races of the typhoid bacillus are much more resistant to the hostile conditions in the intestine than are others. An analysis of the cases in which the organisms have been recovered from the stools shows that this method of diagnosis may often be useful in early as well as in late stages of the disease, but the difficulty of the technic, together with the relative uncertainty of the results, makes the method of comparatively small value as a routine procedure. The examination of the stools is, on the whole, chiefly important in the recognition of chronic bacilli carriers.

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* Read in the Joint Meeting of the Section on Practice of Medicine and the Section on Pathology and Physiology of the American Medical Association, at the Fifty-ninth Annual Session, at Chicago, June, 1908.

[1] Deutsch. med. Wchnschr., 1907, p. 1684.

If typhoid fever is primarily a septicemia, it is natural to seek for the first signs of the disease in the blood itself. Since Castellani[2] first isolated the typhoid bacillus from the blood of a patient in 1899 the numbers of workers with blood cultural methods has shown a steady increase from year to year, and the literature on this branch of diagnosis has lately exceeded any other. Whereas the first reports on the subject were rather of bacteriologic and pathologic interest, the larger series of cases which have since been collected have shown that the method is of clinical value as well, and have begun to establish it on a practical basis.

The technic which has been most commonly used in making blood cultures has been thoroughly to clean the patient's arm and to take with a syringe about 10 c.c. of blood from one of the veins at the bend of the elbow. The blood is then distributed into several flasks of bouillon and diluted by the medium to such an extent that its bactericidal properties are overcome. Although this method has given excellent results in many hundreds of cases, there is no wonder that it has never become a routine procedure outside of a comparatively few large hospitals. It is distinctly a laboratory rather than a clinical method. Apart from the necessity of having a more or less trained bacteriologist to work out the culture, there are marked objections to the method itself. The culture medium is too bulky; it is often inconvenient to carry flasks of bouillon to the bedside. Then the technic of drawing the blood is not always simple. In fat persons, or in those with small vessels, it is at times almost impossible to insert the point of the needle into a vein. Of more importance, however, is the fact that to the patient and to the family the method must always appear to be a somewhat radical procedure. This is alone sufficient to limit the extent to which even a measure of recognized value will be used as a routine practice.

In order that any diagnostic method shall be accepted by practitioners in general, it must be stripped of all its technical difficulties and reduced to its simplest terms. Toward the accomplishment of this, and toward making the blood culture a practical aid in the diagnosis of typhoid fever, there has been much advance in the last few years. The first step of importance was the introduction by Conradi,[3] in 1906, of ox bile as a culture medium to replace bouillon. The peculiar advantage claimed for the new medium was that the bile salts prevent the coagulation of blood and the formation of bactericidal elements in the blood serum. Whether or not this explains the whole of the action of bile has been doubted. However, from the frequency with which the gall bladder is found infected at autopsy, and from the fact that in chronic bacilli carriers the gall bladder is the usual seat of infection, it is evident that bile must be especially well suited for the growth of the typhoid bacillus. By Conradi's original method, test tubes containing a mixture of ox bile with peptone and glycerin were used. The peptone was added to increase the growth and to aid in preventing coagulation of the blood. The glycerin was to limit the growth of saprophytes. Kayser,[4] however, later demonstrated that as good results can be obtained from the use of pure ox bile alone, and he showed that if the blood added to the medium contains even as few as 2 or 4 bacilli the cultures after incubation will give a profuse growth. Working on another line toward a practical blood-cultural method, Müller and Gräf[5] have reported a series of cases in which they used small amounts of coagulated blood sent to the public laboratory for agglutination tests. After separating the clot from the serum, they used the latter for the agglutination, and the former they rubbed over the surface of Drigalski-Conradi plates. The plates were then incubated, and in 360 cases, including convalescents and chronic bacilli carriers, they were able to isolate the organism in 110, including 10 cases of infection with the paratyphoid bacillus. The disadvantage of such a plate method is that there is no increase in the number of organisms, and if not numerous they might be overlooked or overgrown by saprophytes. Fornet[6] has devised a method analogous to that of Kayser, in which he also uses the clot of blood sent in to be tested for the agglutination reaction, planting it in bile, and examining the culture after incubation. Of a series of 19 cases, 14 gave positive results. It is not expected that this will replace the technic of Conradi and Kayser, but it is a valuable method when it is impossible to get the uncoagulated blood into bile.

Of these various simplified blood cultural methods, one of the most satisfactory is the use of the medium of Kayser with small amounts of blood obtained from the patient's ear.[7] The technic is as follows: The lobe of the ear, after being carefully cleansed with sterile gauze and alcohol, is pricked rather deeply with a small lancet-pointed knife, the blood squeezed out drop by drop, and allowed to run into a test tube containing about 5 c.c. of plain, sterile ox-bile. It is usually easy to collect 2 c.c. of blood without any inconvenience to the patient. The mixture of blood and bile is then placed in the incubator at 37° C. for from 12 to 15 hours, after which a few loopfuls are transferred to a tube of Löffler's blood serum. In some cases, examination of a drop of the original bile culture after incubation shows the presence of a motile bacillus, but more often this is better demonstrated in the water of condensation of the blood-serum tube after about five hours. The presence of a motile bacillus is in itself excellent evidence in favor of an infection by one of the typhoid group; but in order to prove the organisms it is customary to test them for their cultural characteristics and for the agglutination reaction.

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[2] Zentrlbl. f. Bakt., 1902, xxxi, p. 477.

[3] Deutsch. med. Wchnschr., 1906, p. 58.

[4] Kayser: Münch. med. Wchnschr., 1906, pp. 823 and 1053.

[5] Zentrlbl. f. Bakt., 1907, xliii, p. 856.

[6] Münch. med. Wchnschr., 1906, p. 1053.

[7] Peabody: Arch. Int. Med., 1908, i, p. 149.

That this simplified method is one of clinical value has been proved many times. At the Massachusetts General Hospital, where it has been used as a routine measure in all cases of typhoid during the past few months, it has been the means of establishing the diagnosis in 55 of 82 cases examined. In 28 per cent. of the cases the culture gave the diagnosis before the agglutination test. In the first week the culture was positive in all of 17 cases; in the second week, in 70.2 per cent. of 37 cases, and in the third and fourth weeks, in 42.8 per cent. of 28 cases. The agglutination test was positive in 52.9 per cent. of the cases in the first week, in 67.5 per cent. in the second week, and in 82.1 per cent. in the third and fourth weeks. The results are similar to those obtained in larger series of cases, in which the old method of taking a greater amount of blood from a vein has been used.

It is thus evident that in the ox-bile culture method we have a measure of considerable diagnostic importance in the early stages of typhoid fever. It is, moreover, a method which can be used, not only by trained bacteriologists, but by any practitioner. When a man can not do his own bacteriologic work the culture may be sent to a laboratory to be worked out. In Germany some of the large chemical firms have put on sale tubes of bile so sealed that they can be sent through the mail to the public laboratories, where the cultures are incubated and the diagnosis made in the same way in which the public health laboratories in this country perform the agglutination reaction. The physician merely has to prick the patient's ear, collect the blood, and put the tube in the mail. The technic is thus only slightly more troublesome than that of the Widal reaction, and when it is considered how valuable the method is in making an early and accurate diagnosis it would seem that the blood culture must assume a major rôle in the future.

Of all laboratory methods in the diagnosis of typhoid fever there is none which has been used so extensively, or has given such excellent results in the hands of many clinical observers, as has the agglutination reaction. That it has been generally adopted the world over is due to its high degree of accuracy combined with its simplicity. The establishment of public laboratories, where samples of blood are examined for individual practitioners, has brought the test within the reach of a vast number of physicians. While, however, the reaction has proved itself of inestimable value, there are certain important drawbacks to its use. The chief of these is that the agglutination reaction is often late in making its appearance. It is frequently not obtained during the first week of the disease, and while it is present in about three-quarters of the cases during the second week, it may be delayed much longer, and even into convalescence. Its value is, therefore, limited at the very period in the disease in which a diagnostic test is most needed; for while it is often comparatively simple to recognize typhoid fever in its later stages, it is at the onset, during the first week, that the most doubt arises, and it is in the early days of the disease that the danger of contact infection is probably greatest. Moreover, there are certain atypical cases in which the reaction is never obtained. Next to the lateness of the appearance of the agglutination test, its greatest disadvantage is that it is not absolutely specific. It does not always give an etiologic diagnosis. That an agglutination of the typhoid bacillus may be produced by the serum of a patient infected with one of the paratyphoid bacilli is not of great clinical importance; but that the test may be obtained in cases in which the etiologic organism is the pneumococcus,[7] the *Bacillus proteus*,[8] or some other organism not closely allied to the typhoid group, is a fact not to be neglected. The exact percentage of error in the agglutination test it is, of course, impossible to calculate. That it is, however, a very appreciable error any one who has had occasion to use the test extensively must realize. In spite of the fact that the agglutination reaction is in itself by no means an ideal diagnostic measure it is of the utmost value in certain cases, and especially so when taken in conjunction with the blood culture. In the early stages of the disease, before the agglutination test is positive, the diagnosis is made in most cases by the culture; and in the later stages, when the organism can no longer be isolated from the blood, the agglutination reaction is usually present. Thus the one test is supplemented by the other, and in these two comparatively simple clinical methods—the agglutination test and the blood culture in ox bile—we have the means of making an accurate diagnosis of typhoid fever, in the great majority of cases, at any stage in the course of the disease.

DISCUSSION.

Dr. R. L. Jones, Nashville, Tenn.: One of the most important additions to our knowledge of the subject of typhoid fever made in recent years is the means for an early diagnosis, which has been made practicable for us by Dr. Peabody. He will place us under still further obligation if he will make the technic clearer. I have been engaged in this work and have had to work out some of the technic myself. Does the kind of ox bile used make any difference? I find that it is quite different when you get a steer in good condition whose bladder contains considerable bile; the bile will be of a bright green color, while that from a cow or steer not in good condition is more apt to be of a golden yellow color. Butchers tell me that this is the rule. This bright green bile if kept some time will change to the golden yellow color, and I have found that it takes the typhoid organisms longer to develop in the golden yellow bile. If Dr. Peabody uses fresh bile I would like to know how fresh; how long it will keep after sterilizing; and if there is any method by which we can keep it indefinitely in stock.

Dr. Francis W. Peabody, Boston: I can only say that we have never had any trouble at all. We have taken the bile from several different animals and used it as it came from the slaughter-house. Lately we have been using pig's bile, which seems to give as good results. As to keeping the bile after it is sterilized, we have had no difficulty on this point, and have used successfully bile that was four months old. It was sterilized as soon as it came from the slaughter house, kept in bulk in the ice chest, and put into test-tubes as it was needed.

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[8] Zeit. f. klin. Medizin, 1905, p. 27.

TYPHOID BACILLI CARRIERS.*

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The obscurity of the origin of a large percentage of typhoid fever outbreaks led many observers to the supposition that perhaps some saprophytic member of the colon group might change under bad hygienic conditions to the typhoid bacillus.

Further investigation revealed the fact that a small percentage of persons after recovering from typhoid fever pass typhoid bacilli in the urine. The attack of typhoid fever in some of these cases had been a number of years before. Continued examinations showed that these cases were comparatively rare, and it did not seem possible that they could account for all outbreaks of typhoid fever, where one could not trace the infection to those having the disease.

In 1902 von Drigalski and Conradi found typhoid bacilli in stools of four persons who had had no typhoid fever symptoms, but had been in contact with typhoid patients. Soon it was found that a number of typhoid convalescents continued to pass typhoid bacilli for long periods after recovery. Examinations of persons who had had typhoid fever years before revealed the remarkable fact that 1 or 2 per cent. of them were passing typhoid bacilli, sometimes in enormous numbers. The knowledge that the gall bladder had been found infected at operations for calculi suggested this as the source of the bacilli.

A number of autopsies or operations have since been held on these typhoid bacilli carriers and proven this to be the case. Thus, Levi and Kayser reported, in 1906, a case of a woman, 49 years old, who had had typhoid fever in 1903 and made a good recovery. In 1906 the woman died from some other disease; autopsy was held nineteen hours after death. Typhoid bacilli were present in the liver, in the wall of the gall bladder and inside a number of calculi.

Kayser reports that in Strassburg during the year 1904-5 13.5 per cent. of all cases of typhoid were traced to 6 of these typhoid carriers, all of whom were women and gave histories of having had typhoid from one to 27 years before.

A large number of cases of typhoid fever have now been traced to these chronic bacilli carriers. Thus, Lentz states, in 1905, that seven physicians had then reported typhoid cases from bacilli carriers. The first reports the case of a patient who had had typhoid 3 years before, who was known to cause 2 cases of typhoid; the second reports 4 typhoid carriers, who had had typhoid as long ago as 42 years, 15 years, 13 years and 12 years, respectively. To these 4 were traced 12 cases of typhoid. The third reports a typhoid carrier who had typhoid 19 years before, who caused 6 cases of typhoid. The fourth reports a carrier who had had typhoid 11½ years before, but to whom no cases had been traced; the fifth had a patient who had had typhoid 17 years before and had caused 27 cases; the sixth had a patient who had had typhoid 10 years before and had caused one other case, and the seventh reported a bacilli carrier who had had the disease 17 years before. To this last individual 2 cases were due.

Out of 400 recorded typhoid patients Lentz found that 6 retained the bacilli at the end of periods ranging from 3⅓ to 13 months. Klinger examined the feces of 1,700 healthy persons who had never knowingly had typhoid and found bacilli in 11.

When the bacilli were in the stools of typhoid carriers, Lentz found that he could not get rid of them by any treatment. Their retention is due, he thinks, to faulty metabolism and concomitant chronic disease. Faulty care during convalescence may also be a cause.

He notes the predominance of women who are carriers over men, and especially married women who have borne children.

In most cases, the bacilli are present in great numbers. Lentz suggests that the gall bladder may not be the only source, but that the appendix and the deeper folds of the intestine may also be involved.

In conclusion, he suggests the following procedures for controlling these carriers. These, as we note later, can hardly be carried out except in special cases.

1. Disinfection of stools.
2. Disinfection of privies.
3. Police notification.
4. Bacteriologic control of stools.
5. Prevention of any occupation in which the carrier is in a position to infect others.

INVESTIGATIONS ON TYPHOID CARRIERS AT THE RESEARCH LABORATORY DEPARTMENT OF HEALTH.

History.—On March 20, 1907, a cook was brought to the laboratory to have the feces and urine examined. The history as developed by Soper revealed the fact that during the past eight years she had been employed in eight families and in seven of these typhoid fever had broken out within a few weeks or months of her arrival. In all twenty-six cases and one death occurred. Just before her removal to the Department of Health two cases had developed in the family where she resided and one patient died. Bacteriologic examination revealed the fact that fully 30 per cent. of all the bacteria voided with the feces were typhoid bacilli. The urine was negative. Careful cultural and agglutination tests showed that they differed in no respect from bacilli obtained from acute cases. The repeated outbreaks occurring after her entrance in families were in themselves proof that the virulence of the bacilli had remained intact. A curious feature of the case is that the woman denies that she ever had typhoid fever.

Treatment.—This woman has now been isolated for sixteen months. Weekly examinations of the stools have usually revealed large numbers of bacilli, but there have been several intervals when for one or two weeks no bacilli could be detected. Treatment by intestinal antiseptics has proved unavailing. Hexamethylenamin in doses gradually increasing from 100 up to 150 grains a day, has been given for a number of weeks with no apparent benefit. Attention to diet and mild laxatives has caused the greatest reduction, but not their disappearance. This suggests that the chief development of the bacilli is in the intestines, although the source of the infection is probably the gall bladder.

The case of this woman brings up many interesting problems. Has the city a right to deprive her of her liberty for perhaps her whole life? The alternative is to turn loose on the public a woman who is known to have infected at least twenty-eight persons.

This case excited so much interest that I decided to there is an advantage in emptying the bowels. The patients who are not purged seem to do just as well—in fact, better. A study which I made of five hundred cases, in which this point was specially noted, showed that diarrhea, not only at the onset, but during the course, occurred in a much larger number of those who were given an initial purge than in those whose bowels were left alone. If the patient's intestinal tract is not disturbed and a simple diet with much water given, it is surprising how infrequently diarrhea occurs.

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* Read in the Joint Meeting of the Section on Practice of Medicine and the Section on Pathology and Physiology of the American Medical Association, at the Fifty-ninth Annual Session, at Chicago, June, 1908.

Constipation is to be preferred and as a rule a movement every second day is often enough. If the bowels do not move themselves an enema may be given. This may be the ordinary one of soap and water, or oil and glycerin may be given. It is sometimes well to give an oil enema high in the bowel through a long tube, which, if necessary, may be followed by a simple enema. The comfort of the patient must be consulted; some patients are easier if the bowels are moved every day.

THE USE OF OPIUM.

In the majority of indications usually given for the use of opium I would oppose the views laid down in many of the books. The conditions for which it is generally employed are: First, restlessness and sleeplessness; second, diarrhea; third, hemorrhage, and fourth, abdominal pain.

1. *Restlessness and Insomnia.*—Here in small doses its use is sometimes advisable, but if indicated it often seems better to give small doses of morphin hypodermically.

2. *Diarrhea.*—Here, as is usually the case in diarrhea in general, opium should be the last drug to be used, instead of the first, as is too often the case. The cause should be searched for first, for too often this is left to act and opium is given to prevent the result. An initial purge, improper feeding, the giving of beef tea or predigested foods, the use of infected milk—any of these may be the cause. The diet should be cut down to albumin water, or if milk is given it should be boiled, and sedatives, such as bismuth, may be given. If opium is needed it should be given as the starch and laudanum enema. Given by mouth, opium favors distention and conceals the most valuable symptom of perforation, abdominal pain.

3. *Hemorrhage.*—Here the standard treatment is to give opium, especially in the form of the lead and opium pill. To this treatment, although sanctioned by tradition and authority, I would take exception. The advantage is claimed for it that peristalsis is lessened. ve we any proof that this is an advantage? It may the chance of a clot being dislodged, but when we how rarely a clot is found at autopsy in patients o have died after hemorrhage, the importance of this es not seem great. Against the use of opium there several points. It increases the chances of disten- in itself a serious matter. In the case of gastric , distention increases the chance of perforation and same is probably true of the bowels. Then in a con- erable number of cases hemorrhage and perforation occur together. Give opium for the hemorrhage and we know the end. It comes painlessly, but surely. Any one who has been called in consultation to decide as to the possibility of perforation in a patient who has had large doses of opium, knows how hopeless it is to give any opinion. Then, too, the giving of large amounts of opium seems to have an injurious effect on the general condition of the patient.

4. *Abdominal Pain.*—Under no circumstances should opium be given, for this is our chief aid in the recognition of perforation. The men who treat many patients with typhoid fever and say that they never have perforation probably do one of two things, perhaps both (possibly it would be better to say they do one and leave the other undone); they give opium or do not have autopsies.

The first thing in the treatment of abdominal pain is to determine the cause. Evidently if it be due to a distended bladder, meteorism or impacted feces, we are not going to help matters, but rather make them worse, by giving opium. If the cause can be found the indications are clear; if it can not be found we must not give a drug which prevents our determining the cause, certainly in the more serious conditions. When the cause is not determined—and these cases are not very rare—simple measures, such as the application of stupes or small doses of bromid of potassium or codein may be enough. If the pain is not relieved by these, it may be necessary to give a small dose of morphin hypodermically (gr. 1/8), which is always to be preferred to opium. In this dosage it is not likely to mask abdominal symptoms.

HEMORRHAGE.

There seems no doubt that the use of the calcium salts, preferably the lactate, is helpful. In hospitals, or elsewhere when possible, it is well to take the coagulation time of the blood when the patient comes under observation. If this be prolonged it is well to give the calcium lactate as a prophylactic measure. Too large doses should not be given; probably twenty grains a day is enough. In case of hemorrhage the drug should be begun at once and thirty grains a day may be given. When it is important to obtain a rapid action the calcium lactate may be given subcutaneously in a 1 per cent. solution. The use of astringent drugs, such as lead acetate, or the giving of ergot, does not seem to be of any use and the latter is perhaps harmful. Quiet is essential and if the patient is restless this may be secured by a small dose of morphin (gr. 1/8) hypodermically. it is well to limit the amount of food by mouth, reducing the diet to albumin water or sometimes to water alone.

To keep the patient quiet, to limit the intake, to apply a light ice-bag to the abdomen, to give the calcium salts, not to give opium, and not to try to do too much, seem the main points in the treatment of this complication, which after all is not usually as dangerous as has been thought.

PERFORATION.

How many of the five thousand[5] patients every year in the United States in whom perforation occurs are saved and how many should be saved? If those two figures do not correspond, where is the blame? To determine how many should be saved is difficult, but it is a question whether we are sufficiently awake to the frequency of perforation, or to the importance of its early recognition and treatment. There is no doubt of the much greater difficulty in diagnosis and treatment when patients are treated at their homes than when they are in a hospital. Still, even here it would seem that much more might be done. To make an early diagnosis of perforation, preparations must be made beforehand. As a rule the diagnosis does not force itself on the careless observer. The lesson of the importance of prompt cooperation between the medical and surgical sides has been learned in many hospitals, but there are still some in which more attention might be given to this. The early recognition of this complication is as much a matter of treatment as anything else.

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[5] This is, of course, only a general figure. The actual number is probably much greater.

DISTENTION OF THE STOMACH.

While we are all aware of distention of the intestines it is not so generally recognized that distention of the stomach is by no means rare. It may give considerable distress and affect both the respiration and the action of the heart. The passage of a stomach-tube gives immediate relief and no hesitation need be felt in doing it. The tube can be passed without raising the patient's head. It is well to cut down the diet to albumin water and to repeat the passage of the stomach-tube as often as necessary.

ALCOHOL.

The indications for the use of alcohol are much disputed and some of our extreme friends hold that its use is never justified. Certainly its routine use is not to be advised. I consider that the best indication for its use is toxemia. In some way or other the toxic patient can use alcohol, whether we consider it a stimulant or a food. When it is being given care should be taken to use a good variety, just as we make sure that the milk is good. The amount must be decided by the needs of the patient. Generally, when it is indicated, good doses are advisable, from six to twelve ounces in the twenty-four hours; two or three ounces in the same period are usually not enough. The statement is still repeated at times that the patient who is being given tub baths needs alcohol. This is by no means the case—quite the contrary. The patient who is receiving the tub treatment as a rule, requires less alcohol, as toxemia is so much diminished. Alcohol does not require to be given merely because the patient is having baths.

HEXAMETHYLENAMIN.

When we remember the frequency of bacilluria and the very common presence of typhoid bacilli in the gall bladder it seems wise to suggest the administration of hexamethylenamin (urotropin) to every patient. The work of S. J. Crowe[6] who has shown that when this drug is given in sufficiently large amounts (75 gr. per diem) it appears in the bile in quantities sufficient to have a bactericidal action, proves the value of this. He also found that hexamethylenamin was present in the cerebrospinal fluid, synovial fluid, saliva, pleural effusion and blood. How much "killing out" of typhoid bacilli we can do by this means is as yet undetermined, but certainly these findings are suggestive.

The question arises as to the safety of giving such an amount of this drug (75 gr. per diem) to patients as a routine. There are reported instances[7] of hematuria following its administration. These are comparatively few but further observations are necessary before positive statements can be made. With the number of patients of all kinds who are taking this drug it should not be long before we have definite statistics from a large number of observations. Painful micturition sometimes occurs but it is not serious and disappears rapidly after stopping the drug.

Certainly in view of the fact that smaller doses (gr. 30 to 40 per diem) apparently prevent bacilluria, we should not hesitate to give these to every patient.

SEROTHERAPY.

It does not seem possible at the present time to speak with certainty as to the value of any of the various serums which have been used. The results claimed by Chantemesse are excellent but have not been sufficiently verified by other observers.

PREVENTIVE INOCULATION.

While this has proved of some value in military medicine, especially when troops were to be sent to infected localities, yet the results have not been strikingly successful. That it can be of much value in ordinary practice seems doubtful, especially when we remember that it is not wise to employ it during the time of an epidemic owing to the temporary increase in susceptibility following the inoculation. The "man in the street" is not likely to be willing to undergo it at other times.

THE PREVENTION OF INFECTION.

It is to this that we must devote more care than we have in the past. We quite understand what a man means if he says that he has attended ten patients who were seriously ill and brought them all through safely. But if he announced that he had attended ten patients without a single case of infection from them and no danger of infection in the future, we should wonder at first what he meant. Yet the second statement means more to the community and represents a great deal more thorough and commendable treatment than the first. It often requires care and brains and hard work to pull a patient through the attack, but it needs more of all three to ensure that he does not pass his infection on to some one else.

The work of recent years has brought to our notice certain methods of transmission which may be emphasized. One is the importance of contact infection. How much this means through the country may be guessed at perhaps by the number of cases which occur in our hospitals. "Accidents occur in the best-regulated families," but altogether too many "accidents" of this kind occur in our best-regulated hospitals. In reference to this point, an excellent study is that by D. L. Edsall,[8] which should be read by all those interested in the subject. The report of the Commission for the Study of Typhoid Fever in the Spanish-American War (Reed, Vaughan and Shakespeare), did much to bring out the importance of contact infection.

Another method is what may be termed intermediate contact, in which the bacilli are carried by flies. How difficult this is to prevent perhaps the country practitioner can tell better than his city confrère. Unfortunately we all know it. Then there are the so-called "carriers" who go about with a supply of typhoid bacilli which are being constantly distributed.

HOSPITAL TREATMENT.

When we turn to the question of the prevention of infection and the carrying out of the proper measures we realize the tremendous difficulties involved. Until recently the custom in Britain of sending patients with typhoid fever to special hospitals seemed rather unnecessary, but we have learned how wise such a plan is. There seems no question of the necessity of our introducing very much greater care and more stringent regulations in handling the patient with typhoid fever.

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[6] Johns Hopkins Hosp. Bull., 1908, xix, 109.

[7] Coleman: Med. News, New York, 190 , lxxxiii, 9 .

[8] Am. Jour. Med. Sc., 1908, cxxxv, 469.

have tested a large number of typhoid convalescents. Eight months ago there was a typhoid epidemic at the Trenton (N. J.) State Insane Asylum. Through the courtesy of those in charge we were able during the past two months to examine the stools from 52 persons who had had typhoid at that time; 2 of these were found to pass numerous typical typhoid bacilli. Their stools were examined four times. One case revealed the bacilli only once, in the other they were present every time.

The stools of 16 persons, who had suffered from typhoid fever in the Long Island State Asylum, were sent us by Dr. Agnew. Two of these persons were found to pass abundant typical typhoid bacilli; they had been well for six months. Repeated examinations have shown the constant presence of bacilli. One of these cases was so mild that the patient was only suspected to have typhoid fever because of the other cases of that disease.

We have, therefore, found typhoid bacilli in the stools of 6 per cent. of the cases examined. During the autumn we examined the feces from a large number of persons convalescent from typhoid fever just as they left the hospital and found bacilli persisted in the feces of about 5 per cent. It was impossible to trace the cases further.

The bacteriologic tests were carried out by Dr. Goodwin and the Misses Noble and Pratt, bacteriologists in the Research Laboratory.

These examinations indicate that the same conditions exist in this country as in Europe, namely, that fully 2 per cent. of persons who have had typhoid fever are typhoid bacilli carriers. A few of these pass infected urine, but most infected feces. Besides these there are numerous typhoid carriers who never had typhoid fever, but through contact with infection became bacilli carriers. Probably at least one in every five hundred adults who have never knowingly had typhoid fever is a typhoid bacilli carrier.

As the majority of typhoid cases occur before the age of 30, the average life of typhoid carriers is fully 25 years, so that we have the somewhat appalling fact that there are at least half as many recovered typhoid cases who are typhoid carriers as there are typhoid cases in any year and that, besides these, there are the typhoid carriers, such as the cook, who have never had typhoid fever.

What can we do under these circumstances? It seems to me that any attempt to isolate and treat on bacteriologic examinations, as Lentz suggests, is impracticable. When we consider that the presence of the bacilli in the feces of these persons is often only occasional, that numerous contact cases having never had typhoid fever would not come under suspicion, and finally, the impracticability of isolating for life so many persons, we are forced to consider isolation utterly impracticable, except as in the case of the cook already described, where conditions increase the danger to such a point that an attempt at some direct prevention becomes an essential.

We must, therefore, as before, turn to the more general methods of preventing infection, such as safeguarding our food and water, not only chiefly when typhoid fever is present, but at all times, for we now know that in every community, whether it be large or small, unsuspected typhoid bacilli carriers may always be present.

DISCUSSION.

Dr. Henry Albert, Iowa City, Iowa: A small epidemic of typhoid fever, traceable to a bacillus carrier, occurred in Cedar Falls, Iowa, last fall. It was an epidemic of thirteen cases of typhoid, occurring at about the same time in three families that lived in the same neighborhood. The water supply was first investigated and it was found that these families were using the ordinary supply of the city, the same as that used by a majority of the people. The water supply as the medium of infection having been ruled out, the milk supply was next investigated and it was found that the families in which the cases of typhoid occurred all obtained their milk from one source, and that no other family in the city was supplied from this source. We then investigated more in detail as to the possibility of the contamination of the milk and found that the owner of the cow, who also did the milking, had had typhoid about fifteen months previously, but had not had a sign or symptom of typhoid since, or for more than a year. A bacteriologic examination of the urine and feces of this man was made and typhoid bacilli found in the urine in considerable number. There was no evidence of an inflammatory condition of the kidneys or bladder. We felt reasonably certain that the epidemic was caused by this bacillus carrier. Hexamethylenamin in the form of urotropin was given and in a few weeks the urine was free from the typhoid bacilli. I feel certain that other epidemics I have observed in the past were caused by individuals of this kind.

Dr. William Litterer, Nashville, Tenn.: The subject of typhoid carriers is an exceedingly important one. I have in mind a patient who had typhoid fever one year ago. The patient subsequently developed a post-typhoid necrosis of the rib which was operated on by Dr. W. A. Bryan of Nashville. A sinus appeared and a large amount of pus exuded from this wound, something like four or five ounces a day. This condition existed for three months, the patient growing weaker, rapidly losing flesh, and vague pains developed throughout the body The surgeon requested that I isolate the organisms in said pus and make a vaccine according to the method of Wright This I did and much to my surprise I found pure culture of the *Bacillus typhosus* in enormous numbers. I take this to be unique inasmuch as no other organism, such as the pyogenic cocci or other bacteria could be found in this exuding sinus of over three months' standing. I made a comparative estimate of the number of typhoid bacilli in this pus and found that an ordinary platinum loop full contained nearly a half million of bacilli. This case could be rightfully considered as one of a typical typhoid carrier and an especially dangerous one if the discharges from the sinus were not destroyed Two months' injection with the autogenous typhoid vaccine produced very gratifying results. The patient is much stronger, gaining steadily in weight and there is an absence of the vague pains throughout body. The sinus has almost healed, only about half a dram of pus exuding in the twenty-four hours. Recently I made another bacteriologic examination and found only a few typhoid bacilli and some specimens of *Staphylococcus pyogenes aureus*. If the patient ceases to improve I intend to make a staphylococcic vaccine and inject this, with the typhoid vaccine. Dr. Park has called attention to the fact that many of these "carriers" have an infected gall bladder, and it has been suggested by some that, in order to cure this condition, a surgical operation would be necessary. It might be possible to try vaccine therapy in curing these conditions.

Dr M. J. Rosenau, Washington, D. C.: I can not take Dr. Park's place, but feel sure that if he were here he would say that "typhoid Mary" refuses to submit to surgical interference. She is perhaps justified in this conclusion, because the gall bladder is not the only source of the typhoid bacilli that appear in the feces. Surgical interference therefore may not always correct the condition. Sometimes the feces of these carriers contain such large numbers of typhoid bacilli as almost to displace the colon bacillus: it seems that the typhoid bacillus may take up a natural habitat somewhere in the intestinal tract indepedendent of the gall bladder. We have not been able to find a chronic bacillus carrier of this type in Washington.

THE TREATMENT OF TYPHOID FEVER.*

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There is no intention in this paper to endeavor to discuss all the phases of the treatment of typhoid fever, but those will be considered about which there is the greatest difference of opinion or which deserve special emphasis. In the consideration of the handling of a patient with typhoid fever we must always have the individual in mind and care for him rather than treat a disease. No one method suits every patient any more than clothing made to one measurement fits every man. The man can exist whether the clothing suits his figure or not, but he is not garbed to the best advantage. In the same way one method of treatment may bring a certain patient through the illness, but not in the easiest or best way. It seems to me that the importance of drilling this fact into our students should be more realized by those of us who are teaching therapeutics—and every clinical teacher must consciously or unconsciously be teaching something about the care of the patient—for there would be less of rule-of-thumb methods if individuality in treatment was the rule in the minds of each one of us.

DIET.

Much controversy has been waged over diet. Most of us have our own ideas and are not easily convinced that any others can be better. No matter what views are advanced some one will disagree vigorously, which is by no means a disadvantage. This divergence of opinion is not surprising when we consider what a protean disease this is and as much so in the ways in which it is handled as in its manifestations. Many patients will go through an ordinary mild attack with any reasonable kind of food, but I feel that in the attack of ordinary severity and in all severe attacks, the simpler the diet the better for the patient. Milk and albumin water are satisfactory, easily obtained and prepared, and cheap. We should always be careful to make certain that we are not giving contaminated milk. For the account of a good object-lesson as to the importance of this precaution a paper by Edsall[1] may be consulted. To these may be added the various modifications of milk, of which whey is specially useful, bouillon, strained gruel, ice cream, tea and coffee, and sometimes cocoa; this list really gives considerable choice. Emphasis should be laid on the value of whey in the dietary. In the conditions in which milk disagrees whey may be given with great advantage. The importance of carefully watching the stools and being guided by them as to changes in the diet should be remembered. In all cases special emphasis should be laid on the giving of large amounts of water. Let one hundred ounces (3,000 c.c.) of urine a day be the minimum to be desired, and often it is better that larger amounts than this should be passed. Consider the experience of the Lakeside Hospital in Cleveland,[2] where it was found to be a saving in the time of the nurses to have one nurse especially detailed to do nothing else than give water to the typhoid fever patients. There does not seem any evidence for the opinion held in some quarters that there is the possibility of harming the kidneys. The work of Sollmann and Hofmann[3] speaks against this. The voiding of large quantities of urine does not seem to cause the patients any disturbance. There does not seem to be any danger of giving the circulation too much work to do in handling this fluid. One should use judgment if the myocardium is weak, but in a large series of cases no evidence of overloading of the heart was found.

There are certain intestinal conditions in which there seems no question of the advantage of the simple diet. These are especially meteorism and perforation. With any tendency to tympanites, it is wise to give the simplest diet and not too much of it; when tympanites is present the diet should be reduced. Therefore, does it not seem that on the simple diet there is less chance of its appearance? I am of the opinion that liquid diet and large amounts of water are the surest preventives of meteorism. Certainly when this treatment is carried out the occurrence of meteorism is reduced to a minimum, and the best treatment of meteorism is its prevention. If perforation occurs and operation is done early, it is a great disadvantage to have the intestines distended or full of material. We can count on a certain percentage of perforations in any large series of cases, but we can not tell at the outset which ones are to perforate.

Under the heading of diet reference must be made to the so-called predigested foods, which are so extensively used. Is their use justified or to be recommended? Many of the profession by their actions answer in the affirmative and the question comes as to how much justification there is for this belief. I would advise all those who have any doubts on this subject and those who believe in the value of these foods to read with an open mind the report[4] of the Council of Pharmacy and Chemistry of the American Medical Association on them. The main objections to their use may be thus summed up:

1. They contain comparatively little nutriment.
2. They may be directly injurious from the presence of peptones or albumoses, which are of uncertain composition and may be toxic or become so.
3. The presence of alcohol in them may be harmful.
4. They are expensive.

Clinically they certainly appear in some cases to upset the stomach and cause diarrhea and distention. To give amounts of these foods which would go even a small way toward nourishing the patient, means the administration of considerable amounts of alcohol. If alcohol is to be given, it is better to give it as such and not as the constituent of one of these foods.

That any one who knows their composition can persist in considering that they have some mysterious nutritive virtue is hard to believe; and yet how else can we explain the blind belief in their value, especially when we consider that they are "drug-store" foods and may have had some time to "ripen" before being used? Their cost is a serious objection, especially when so little is obtained in return.

CARE OF THE BOWELS.

An initial purge is advised by many authorities; but is anything gained by it? It is asserted that there is an advantage in emptying the bowels. The patients who are not purged seem to do just as well—in fact, better. A study which I made of five hundred cases, in which this point was specially noted, showed that diarrhea, not only at the onset, but during the course, occurred in a much larger number of those who were given an initial purge than in those whose bowels were left alone. If the patient's intestinal tract is not disturbed and a simple diet with much water given, it is surprising how infrequently diarrhea occurs.

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* Read in the Joint Meeting of the Section on Practice of Medicine and the Section on Pathology and Physiology of the American Medical Association, at the Fifty-ninth Annual Session, at Chicago, June, 1908.

[1] New York Med. Jour., 1905, lxxxi, 578.

[2] Cushing and Clarke: Am. Jour. Med. Sc., 1905, cxxix, 187.

[3] Am. Jour. Med. Sc., 1905, cxxix, 195.

[4] The Jour. A. M. A., 1907, xlviii, 1612.

Constipation is to be preferred and as a rule a movement every second day is often enough. If the bowels do not move themselves an enema may be given. This may be the ordinary one of soap and water, or oil and glycerin may be given. It is sometimes well to give an oil enema high in the bowel through a long tube, which, if necessary, may be followed by a simple enema. The comfort of the patient must be consulted; some patients are easier if the bowels are moved every day.

THE USE OF OPIUM.

In the majority of indications usually given for the use of opium I would oppose the views laid down in many of the books. The conditions for which it is generally employed are: First, restlessness and sleeplessness; second, diarrhea; third, hemorrhage, and fourth, abdominal pain.

1. *Restlessness and Insomnia.*—Here in small doses its use is sometimes advisable, but if indicated it often seems better to give small doses of morphin hypodermically.

2. *Diarrhea.*—Here, as is usually the case in diarrhea in general, opium should be the last drug to be used, instead of the first, as is too often the case. The cause should be searched for first, for too often this is left to act and opium is given to prevent the result. An initial purge, improper feeding, the giving of beef tea or predigested foods, the use of infected milk—any of these may be the cause. The diet should be cut down to albumin water, or if milk is given it should be boiled, and sedatives, such as bismuth, may be given. If opium is needed it should be given as the starch and laudanum enema. Given by mouth, opium favors distention and conceals the most valuable symptom of perforation, abdominal pain.

3. *Hemorrhage.*—Here the standard treatment is to give opium, especially in the form of the lead and opium pill. To this treatment, although sanctioned by tradition and authority, I would take exception. The advantage is claimed for it that peristalsis is lessened. Have we any proof that this is an advantage? It may lessen the chance of a clot being dislodged, but when we think how rarely a clot is found at autopsy in patients who have died after hemorrhage, the importance of this does not seem great. Against the use of opium there are several points. It increases the chances of distention, in itself a serious matter. In the case of gastric ulcer, distention increases the chance of perforation and the same is probably true of the bowels. Then in a considerable number of cases hemorrhage and perforation occur together. Give opium for the hemorrhage and we know the end. It comes painlessly, but surely. Any one who has been called in consultation to decide as to the possibility of perforation in a patient who has had large doses of opium, knows how hopeless it is to give any opinion. Then, too. the giving of large amounts of opium seems to have an injurious effect on the general condition of the patient.

4. *Abdominal Pain.*—Under no circumstances should opium be given, for this is our chief aid in the recognition of perforation. The men who treat many patients with typhoid fever and say that they never have perforation probably do one of two things, perhaps both (possibly it would be better to say they do one and leave the other undone); they give opium or do not have autopsies.

The first thing in the treatment of abdominal pain is to determine the cause. Evidently if it be due to a distended bladder, meteorism or impacted feces, we are not going to help matters, but rather make them worse, by giving opium. If the cause can be found the indications are clear; if it can not be found we must not give a drug which prevents our determining the cause, certainly in the more serious conditions. When the cause is not determined—and these cases are not very rare—simple measures, such as the application of stupes or small doses of bromid of potassium or codein may be enough. If the pain is not relieved by these, it may be necessary to give a small dose of morphin hypodermically (gr. 1/8), which is always to be preferred to opium. In this dosage it is not likely to mask abdominal symptoms.

HEMORRHAGE.

There seems no doubt that the use of the calcium salts, preferably the lactate, is helpful. In hospitals, or elsewhere when possible, it is well to take the coagulation time of the blood when the patient comes under observation. If this be prolonged it is well to give the calcium lactate as a prophylactic measure. Too large doses should not be given; probably twenty grains a day is enough. In case of hemorrhage the drug should be begun at once and thirty grains a day may be given. When it is important to obtain a rapid action the calcium lactate may be given subcutaneously in a 1 per cent. solution. The use of astringent drugs, such as lead acetate, or the giving of ergot, does not seem to be of any use and the latter is perhaps harmful. Quiet is essential and if the patient is restless this may be secured by a small dose of morphin (gr. 1/8) hypodermically. it is well to limit the amount of food by mouth, reducing the diet to albumin water or sometimes to water alone.

To keep the patient quiet, to limit the intake, to apply a light ice-bag to the abdomen, to give the calcium salts, not to give opium, and not to try to do too much, seem the main points in the treatment of this complication, which after all is not usually as dangerous as has been thought.

PERFORATION.

How many of the five thousand[5] patients every year in the United States in whom perforation occurs are saved and how many should be saved? If those two figures do not correspond, where is the blame? To determine how many should be saved is difficult, but it is a question whether we are sufficiently awake to the frequency of perforation, or to the importance of its early recognition and treatment. There is no doubt of the much greater difficulty in diagnosis and treatment when patients are treated at their homes than when they are in a hospital. Still, even here it would seem that much more might be done. To make an early diagnosis of perforation, preparations must be made beforehand. As a rule the diagnosis does not force itself on the careless observer. The lesson of the importance of prompt cooperation between the medical and surgical sides has been learned in many hospitals, but there are still some in which more attention might be given to this. The early recognition of this complication is as much a matter of treatment as anything else.

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[5] This is, of course, only a general figure. The actual number is probably much greater.

DISTENTION OF THE STOMACH.

While we are all aware of distention of the intestines, it is not so generally recognized that distention of the stomach is by no means rare. It may give considerable distress and affect both the respiration and the action of the heart. The passage of a stomach-tube gives immediate relief and no hesitation need be felt in doing it. The tube can be passed without raising the patient's head. It is well to cut down the diet to albumin water and to repeat the passage of the stomach-tube as often as necessary.

ALCOHOL.

The indications for the use of alcohol are much disputed and some of our extreme friends hold that its use is never justified. Certainly its routine use is not to be advised. I consider that the best indication for its use is toxemia. In some way or other the toxic patient can use alcohol, whether we consider it a stimulant or a food. When it is being given care should be taken to use a good variety, just as we make sure that the milk is good. The amount must be decided by the needs of the patient. Generally, when it is indicated, good doses are advisable, from six to twelve ounces in the twenty-four hours: two or three ounces in the same period are usually not enough. The statement is still repeated at times that the patient who is being given tub baths needs alcohol. This is by no means the case—quite the contrary. The patient who is receiving the tub treatment, as a rule, requires less alcohol, as toxemia is so much diminished. Alcohol does not require to be given merely because the patient is having baths.

HEXAMETHYLENAMIN.

When we remember the frequency of bacilluria and the very common presence of typhoid bacilli in the gall bladder, it seems wise to suggest the administration of hexamethylenamin (urotropin) to every patient. The work of S. J. Crowe,[6] who has shown that when this drug is given in sufficiently large amounts (75 gr. per diem) it appears in the bile in quantities sufficient to have a bactericidal action, proves the value of this. He also found that hexamethylenamin was present in the cerebrospinal fluid, synovial fluid, saliva, pleural effusion and blood. How much "killing out" of typhoid bacilli we can do by this means is as yet undetermined, but certainly these findings are suggestive.

The question arises as to the safety of giving such an amount of this drug (75 gr. per diem) to patients as a routine. There are reported instances[7] of hematuria following its administration. These are comparatively few, but further observations are necessary before positive statements can be made. With the number of patients of all kinds who are taking this drug it should not be long before we have definite statistics from a large number of observations. Painful micturition sometimes occurs, but it is not serious and disappears rapidly after stopping the drug.

Certainly in view of the fact that smaller doses (gr. 30 to 40 per diem) apparently prevent bacilluria, we should not hesitate to give these to every patient.

SEROTHERAPY.

It does not seem possible at the present time to speak with certainty as to the value of any of the various serums which have been used. The results claimed by Chantemesse are excellent, but have not been sufficiently verified by other observers.

PREVENTIVE INOCULATION.

While this has proved of some value in military medicine, especially when troops were to be sent to infected localities, yet the results have not been strikingly successful. That it can be of much value in ordinary practice seems doubtful, especially when we remember that it is not wise to employ it during the time of an epidemic, owing to the temporary increase in susceptibility following the inoculation. The "man in the street" is not likely to be willing to undergo it at other times.

THE PREVENTION OF INFECTION.

It is to this that we must devote more care than we have in the past. We quite understand what a man means if he says that he has attended ten patients who were seriously ill and brought them all through safely. But if he announced that he had attended ten patients without a single case of infection from them and no danger of infection in the future, we should wonder at first what he meant. Yet the second statement means more to the community and represents a great deal more thorough and commendable treatment than the first. It often requires care and brains and hard work to pull a patient through the attack, but it needs more of all three to ensure that he does not pass his infection on to some one else.

The work of recent years has brought to our notice certain methods of transmission which may be emphasized. One is the importance of contact infection. How much this means through the country may be guessed at perhaps by the number of cases which occur in our hospitals. "Accidents occur in the best-regulated families," but altogether too many "accidents" of this kind occur in our best-regulated hospitals. In reference to this point, an excellent study is that by D. L. Edsall,[8] which should be read by all those interested in the subject. The report of the Commission for the Study of Typhoid Fever in the Spanish-American War (Reed, Vaughan and Shakespeare), did much to bring out the importance of contact infection.

Another method is what may be termed intermediate contact, in which the bacilli are carried by flies. How difficult this is to prevent perhaps the country practitioner can tell better than his city confrère. Unfortunately we all know it. Then there are the so-called "carriers," who go about with a supply of typhoid bacilli which are being constantly distributed.

HOSPITAL TREATMENT.

When we turn to the question of the prevention of infection and the carrying out of the proper measures, we realize the tremendous difficulties involved. Until recently the custom in Britain of sending patients with typhoid fever to special hospitals seemed rather unnecessary, but we have learned how wise such a plan is. There seems no question of the necessity of our introducing very much greater care and more stringent regulations in handling the patient with typhoid fever.

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[6] Johns Hopkins Hosp. Bull., 1908, xix, 109.

[7] Coleman: Med. News, New York, 1903, lxxxiii, 393.

[8] Am. Jour. Med. Sc., 1908, cxxxv, 469.

In view of the constant occurrence of instances of infection in hospitals the need of greater care requires no emphasis. The other patients, nurses, orderlies and physicians are all exposed to this risk. Precautions which we should endeavor to carry out are discussed under various headings.

a. Isolation.—*Should a typhoid patient be isolated in a special ward?* Undoubtedly whenever possible this measure should be carried out. In many hospitals in the ordinary incidence of the disease it seems almost impossible, there is neither the ward accommodation nor a sufficient number of nurses to carry it out. Yet we should endeavor to do it as far as possible. The typhoid fever patients should be kept together in one part of a large ward or as far as possible in one part of the hospital. Every effort should be made to have special nurses and orderlies waiting on these patients alone. The question of a separate kitchen and food supply is also important. The diet for the typhoid patients is so simple and the dishes they require are so few that it is not a difficult matter to keep these separate. One rule should be absolutely enforced—the nurses and orderlies who are waiting on the typhoid-fever patients should have nothing to do with the preparation of the food for the other patients. Too often a nurse goes directly from waiting on a patient with typhoid fever to prepare food for the other patients in the ward, or an orderly may be handling the ice for the water-cooler.

b. Physicians.—It should not be necessary to point out the necessity for care on their part, both for their own sakes and for that of the patients. It requires constant attention always to remember to wash the hands after examining a patient with typhoid fever before going on to a patient with another disease, and yet undoubtedly there is the risk of infection if this is not done. For both physicians and medical students the *need of care in the examination of the urine and stools from typhoid fever patients should be kept in mind.*

c. Nurses.—The frequent occurrence of typhoid fever among nurses suggests that the care usually taken is not sufficient. To reduce or prevent this infection is difficult. Careful instruction as to the danger, strict regulations as to disinfection, and thorough oversight to ensure that these regulations are carried out, are all important. One difficulty is that the nurses often have too much to do. This is especially apt to be the case with the night nurses. Disinfection after each handling of a typhoid-fever patient means time, and this the nurse on a heavy ward may not seem to be able to spare. Whenever possible the nurses attending to the typhoid patients should do that alone. The wearing of rubber gloves should reduce the danger of infection. They could be used for the greater part of the work done, especially that connected with the changing of clothing, handling of bed pans, urinals, etc. In giving sponge or tub baths their use is not so important.

d. Orderlies. It has always been a surprise in the Johns Hopkins Hospital that so few of the orderlies contracted typhoid fever. In any hospital they must always be regarded as likely means of carrying infection; being usually overworked, apt to be careless in any case and thoughtless about danger, they require constant watching. Even with stringent regulations, it is hard to be sure that orders are obeyed. There is no doubt that as much as possible of the waiting on typhoid-fever patients should be done by the nurses. Strict oversight and great care in the handling of the ward utensils are most essential points.

e. Ward Utensils.—These should be rigidly isolated. The bed pans, enema nozzles and urinals should be kept for the use of the typhoid-fever patients only. The thorough disinfection of these is most important. Edsall mentions in the article already noted an apparatus devised by Dr. C. P. Noble in which the bed pans can be boiled. The urinals and nozzles should be boiled and kept in an antiseptic solution. The same rules as to isolation and disinfection should apply to the thermometers. These measures are important, not only for the protection of other patients, but also for that of the nurses and orderlies.

f. Food.—No one who is handling typhoid-fever patients should be allowed to have anything to do with the food supply for the other patients. In almost all hospitals this is difficult to carry out, but it should be done. If a patient with smallpox was concerned, there would be no doubt of this being carried out, but we are accustomed to typhoid fever. The easy possibility of food infection was well shown by an instance which came under my observation. A patient who had a chronic cystitis due to the typhoid bacillus, anxious to be of some help in the ward, was found to have been giving water into which he had put pieces of ice, to other patients. Luckily no infection followed.

g. Flies.—Here is a problem difficult of solution. The easiest way is to keep the flies from the typhoid-fever patient. By screens the number in a ward can be kept to a minimum, and by keeping netting over the patient the chances of the flies in the ward getting at him are reduced. Even with screens it is difficult to keep the flies away when necessary things are being done. Care should be taken to prevent flies from lighting on the dejecta before these are sterilized, and the bed pans should be covered, especially as they are sometimes left standing for some time before being sterilized.

h. Disinfection of Stools and Urine.—The methods for this need not be discussed here. The important thing is to see that they are carried out. For this, constant oversight is necessary, especially of the orderlies.

PRIVATE PRACTICE.

Here the problem of prevention of infection may be much easier or almost impossible of solution. In a wealthy home, with two trained nurses, there is not very great difficulty. The rules of the hospital can be carried out rigidly. But in the homes of the poor it is quite another matter. The mother of a large family may have to nurse the patient and attend to the rest of the family. Take some of the conditions one finds. The patient is nursed by one of the family, possibly well-meaning but ignorant; flies are numerous, both about the patient and on the food; the urine and feces are perhaps thrown out on the ground in the country or in the ordinary privy, the flies being there also. Who can feel any certainty of being able to prevent infection under such circumstances?

Still, much may be done. The danger of infection should be emphasized every day, and, if possible, those waiting on the patient prevented from preparing the food for the family. Specific written directions as to the rules of isolation and disinfection should be given. These should be put under the headings: (1) for the attendants, (2) for the food utensils, (3) for the clothing, sheets, bed pans, etc., and (4) for the urine and stools. The physician should himself demonstrate how the dejecta are to be handled. It should be possible to prevent them from being thrown out on the ground or into an open privy, whether thoroughly disinfected or not. The possibility of infection of a water supply must always be remembered. To keep flies away it is usually possible to have the room screened. If wire screens can not be obtained, cheese-cloth can be put over part of the window to hinder the entrance of flies. Netting can also be used over the patient.

PRECAUTIONS IN CONVALESCENCE.

It is the duty of every man who treats patients with typhoid fever to take every means in his power to be sure before the patients are discharged that they are not typhoid "carriers." This is easy as regards the urine, but very difficult as regards the stools. To every patient urotropin should be given during the course and in convalescence. By doing this we can be reasonably sure that the urine is free of bacilli, and by giving large doses (75 gr. per diem) we may do much to destroy them in the gall bladder. In doing this we should watch constantly to avoid the production of hematuria.

Certainty as to the stools being free of bacilli is difficult to attain. Even in hospitals this may seem impossible. It is a large question and perhaps will have to be a matter of inspection by the state. To hope for this may seem utopian and yet it should come. It would be done in case of plague, but that is an unfamiliar story to us; typhoid fever is an every-day matter and familiarity brings carelessness.

There is no question of the difficulties that meet us when we endeavor to make sure that no other individual stands in any danger of infection from our typhoid-fever patients. It is so easy to rest content with bringing the patient through the attack; that is something which shows and there is no applause for the prevention of cases of typhoid fever which might have been. Yet if the statistics of any community show a decreasing incidence of the disease, every practitioner in it who has done his part to bring this about can have the consciousness that to him belongs some of the credit. Must not this be the highest reward for many of the triumphs of preventive medicine?

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DISCUSSION.

Dr. Alexander Lambert, New York: Feeding experiments were carried out under my care a year ago on a number of patients. In giving a diet absolutely free of milk, in which sugar was abundant, a remarkable point was the absolute lack of meteorism; the abdomens were excavated instead of swollen, the delirium diminished rapidly, the patients were clear-headed, required no medication and lost weight to a small extent. One boy went two and a half weeks with a loss of about five pounds in weight. Dr. McCrae's stand as to diet is the stand of the famous old woman who said that she was always open to conviction, but she would like to meet any one who could convince her. I think that if Dr. McCrae will leave out the milk he will be convinced that there is a better diet and a most generous one, of rice, broth, sugar, butter and a few crackers; it will open his eyes to the possibilities of a diminution in the toxicity of typhoid fever, a diminution of the delirium and meteorism in the majority of patients.

Dr. H. B. Weaver, Asheville, N. C.: It is said that there are lies, exaggerated lies, and statistics. I should hate to give my statistics in reference to typhoid, but my experience has given me some positive ideas regarding the treatment of typhoid with what I call a mixed diet. My plan of treatment is to begin the case with a mild laxative, of calomel, not with the German rule of heroic doses of calomel. After the alimentary canal is cleared then I begin with plenty of water on the inside, and when hyperpyrexia arrives with plenty of water on the outside. As to the diet, I give enough milk, if well borne, with plenty of chicken broth with rice cooked in it, and a few crackers now and then. This will suffice for all cases of typhoid fever. In reference to the bowels, I never give a purgative, but rely on salt solution enemas, Nature's remedy. How do we know whether the system has enough chlorid of sodium remaining to sustain the vitality? It is said that all normally healthy persons excrete from three to four drams of chlorid of sodium daily; may it not be possible that we fail to give enough chlorid of sodium to patients during these four weeks of typhoid fever? Therefore, I mix a little salt with chicken soup and broths, which the patients take with avidity. It seems to me that they relish that food and it keeps them along to convalescence. I let drugs alone, as a rule; pay no attention to the coal-tar remedies, but rely on cold water on the outside and plenty of good water on the inside, with a mixed diet. This treatment will get a majority of patients through successfully.

Dr. E. P. Joslin, Boston: There is one point in this excellent paper to which I must take exception, and that is the recommendation for drinking excessive quantities of water and the excretion of immense quantities of urine in the twenty-four hours. Such a procedure puts a great demand on the individual. If we allow our patients eight out of the twenty-four hours for sleep, a little calculation will show that to void six quarts of urine in the remaining sixteen waking hours the bladder would have to be emptied or a glass of liquid drunk every twenty minutes.

Dr. W. S. Thayer, Baltimore: The importance of early and complete cooperation between physician and surgeon is, after all, a point which relates not only to the complications of typhoid fever, and especially to suspected cases of the bowel, but to practice in general. What one might say regarding perforation in typhoid, one might also say as well with regard to appendicitis. It is important to remember that whenever in such cases there is any thought of surgical interference we should call in our friend, the surgeon, at once. The first impulse of most conscientious physicians and surgeons is to avoid operation unless it is absolutely necessary, and each new man that sees the case passes through this period. I recall vividly a case in point. When I was a resident in a hospital, about fourteen years ago, at a time when early operation for appendicitis was not so common as it is to-day, I was called early one morning to see a nurse. She had an acute appendicitis. I hesitated, however, to send for the surgeon immediately, thinking that she might be better within a few hours. Two hours later I sent for the surgeon. He thought that early operation would be wise, but did not want to hurry and put it off for a few hours more. But in a few hours our minds were made up and the patient was prepared for the operation, when my chief came in and, in turn, said, "Let's wait a little while," and put it off until the afternoon. In the afternoon all were agreed as to the advisability of immediate operation, when the surgeon-in-chief arrived. The surgeon-in-chief, by a like conservative impulse, said, "Let's wait until to-morrow morning." On the following morning when the patient came to operation there was a general peritonitis, and before it was over she had three grave operations and was at the point of death. She is still living, but her life was nearly sacrificed because four conscientious men, seeing her one after another, all wanted to wait a little while; any one, had he seen the case when I first saw it, would have advised operation within an hour or two. The physician should always summon his surgical colleague the moment he suspects the eventual necessity of an operation. Such a procedure saves many lives.

Dr. Lawrence Litchfield, Pittsburg: I heartily endorse, in the main, Dr. McCrae's paper. As to calcium lactate, I even go so far as to give it hypodermically in severe cases. I have seen three cases in which large doses given hypodermically, with normal salt solution, seemed to bring very good results. I can not pass over his objection to initial purging. What he says is very suggestive, but I have the histories of over a thousand cases in which initial purging has been the rule and in which troublesome diarrheas have occurred very rarely. As to what has been said about not purging at all, I gave 150 consecutive patients daily morning doses of sulphate of magnesium, and the mortality was as low as any I ever had, and the hemorrhages and perforations were below the average. Of course, 150 cases are far too few to base conclusions on, but they are enough to show that a laxative is not a deadly thing in typhoid fever. If Dr. Ewing's position is correct, that the nitrogenous waste in typhoid fever is not from the toxins of the invading bacteria, but from autointoxication, largely from the digestive tract, it seems that a great deal might be said in favor, not only of the initial purge, but even of laxatives during the course of the disease. In speaking of flies, Dr. McCrea mentioned keeping them away from the patient and the food, but most important of all is to use covered bed-pans and to keep the stools away from the flies. One point as to the treatment of perforation: On account of difference in the absorptive power in different parts of the peritoneal cavity, as soon as there is a suspicion of perforation the head of the bed should be raised and kept elevated, so that there may be drainage into the pelvic cavity and not the upper part of the peritoneal cavity, which is more vulnerable. I should think it would be dangerous to roll a patient about in the search for movable areas of dulness with the effect of spreading the infection over the entire peritoneal cavity, if a leak should have occurred. As to the large amounts of water, I agree with Dr. Joslin. Of course, typhoid patients should have enough water. You remember Dr. Thayer's suggestive paper some years ago on "The Relation of Typhoid Fever to Arteriosclerosis." I think that we have all seen protracted cases of typhoid in which the radials became palpable under our very fingers. If this is true, would not the overloading of the system with so much water necessitating in extreme cases as practiced in Cleveland, the elimination of four to eight quarts during the twenty-four hours, put an unnecessary and excessive strain on the heart and favor the development of arteriosclerosis?

Dr. Henry B. Favill, Chicago: So far as I know there are only two subjects on which I am unreasonable. One is automobile scorchers and the other lead and opium in hemorrhage. There is no question about the authority, as far as authority goes, on this question of lead and opium, particularly opium, in typhoid hemorrhage. So far as my experience leads me to a judgment, it is a fact that the locking up of the bowel after hemorrhage, with opium, to which the lead is so far as it goes an additional objection, is a pernicious practice not justified by either experience or theory. Three objections exist in my mind: First, it increases the meteorism; second, it tends to obstruct the excretions; third, it frequently locks in the colon a mass of blood which undergoes decomposition to such a degree that it is not to be compared with anything we meet clinically. It is a dreadful condition, hypothetically and, I think, practically, to be superinduced in a serious infective disease.

Dr. John A. Witherspoon, Nashville, Tenn.: I feel much like the boy who wrote the essay on snakes in Ireland and said, "There are no snakes in Ireland." There is no treatment of typhoid fever. I agree with Dr. McCrae when he says, let each case be its individual lesson to us. That is all right, but in his paper he did not, to my mind, carry out the idea with which he started. I heartily agree with Dr. Lambert when he condemns the use of milk, especially sweet milk, in typhoid. I believe that we would have very little meteorism, that we would have very little intestinal disturbance, if we properly fed our patients. Sweet milk has been, in my experience, one of the most universal disturbers both of stomach and intestines of any nourishment I have seen used in typhoid fever; therefore, I have long since ceased to use it, because every case I have demands a mode of treatment to get rid of symptoms directly produced, in my judgment, by such treatment. I believe that Dr. McCrae, who gave us an elegant way of relieving the distended stomach with the stomach tube, if he feeds his patients properly, will rarely find any necessity for using the stomach tube. You will seldom find much gas and diarrhea if you will avoid disturbing the nutrition by improper feeding of your patients. Another point on which I could not agree with Dr. McCrae is the use of hexamethylenamin to kill the bacillus in the gall bladder and elsewhere. I do not believe that it would be possible for hexamethylenamin to destroy the bacteria or bacillus typhus in the gall bladder unless you carried the treatment to such an extent that in the preparation of subjects you would practically have to prepare the dead subjects, as we would the cadaver, to kill the *Bacillus typhosus* with it. While I have had a little experience with hexamethylenamin, it has not given me the results it seems to have given Dr. McCrae. I believe in the management of typhoid fever; there can be no objection in the earliest part of the disease to the initial purge: it has been a universal practice, and I believe does aid in the future welfare of the case. Then as few drugs should be given as possible, and proper nutrition, which, in my judgment, should be egg albumins, broths with rice, etc., in buttermilk, and things of that sort will keep down the necessity for too many drugs. The fewer drugs used in this disease the fewer will be the complications. I endorse everything else in the paper, except excessive drinking of water. I do not believe that it is sensible to deluge the stomach of a patient with water or anything else.

Dr. Thomas McCrae, Baltimore: My experience has been that the large amounts of urine passed do not give any distress to the patients. The ordinary typhoid patient is wakened every three hours in the night to take nourishment and can void at that time. I agree with what Dr. Litchfield said about the advantage of the administration of calcium lactate hypodermically in some cases. In regard to the danger of overloading the circulation with water, I have never seen any evidence of it. What is it that leads to the changes in the arteries? Is it not the presence of toxins? The more we can reduce the toxemia, which you will grant hydrotherapy does, the more we reduce the danger to the blood vessels. Clinically I have not seen any evidence of harm to the circulation. Dr. Witherspoon implied that the patients in whom I had seen distention of the stomach were on a milk diet, but, on the contrary, the majority of them were being given predigested foods, beef tea and broths. Regarding the point about hexamethylenamin not having any effect on typhoid bacilli, it seems to me that if one point has been established it is that hexamethylenamin does kill out the bacteria in the urine. I think that this has been too definitely proved for us to have any doubt of it. In regard to the use of adrenalin in hemorrhage, I have never been able to persuade myself that it is of value either theoretically or in practical results. As to the amount of hexamethylenamin I do not think we know as yet; I mentioned 75 grains a day and perhaps we might go higher, but we have not had enough material as yet to enable us to pass final judgment. This disease has so many phases and such varied symptoms that it is natural we should have various ideas about treatment. The consoling thing is that so many of the patients recover under so many different treatments. It shows that all the truth does not rest in one method. We are all agreed, however, as to the importance of preventing infection from our patients.

Hydrogen Dioxid Test for Blood in Urine.—V. Morinelli, of Buenos Aires, states that hydrogen dioxid is a more sensitive reagent for occult blood than the guaiacum-turpentine test, and even than the spectroscope. All that is necessary is to add a few drops of a concentrated solution of hydrogen dioxid to 10 or 20 c.c. urine in a test-tube, without stirring or heating. If there is any blood or hemoglobin in the fluid, bubbles will form in a few seconds. In his communication to the *Semana Medica*, July 23, 1908, he states that dubious spots on wood or on the ground or elsewhere give the reaction when the hydrogen dioxid is dropped on the suspected spot, even when it is impossible to prepare the material for application of any other test. He says that neither albumin, glucose, mucus or the bile pigments interfere with the reaction. It is positive only when it occurs in less than a minute, without heating or stirring.

THE PRESCRIBING OF PROPRIETARIES, ESPECIALLY PROPRIETARY MIXTURES.

SOLOMON SOLIS COHEN, M.D.
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The manufacturers of medicinal preparations that ought not to be used are adepts in the twisting of language. When the fight against the use of nostrums was renewed some fifteen or twenty years ago, they tried to confuse "nostrums," *i. e.*, secret remedies, with "proprietaries," *i. e.*, preparations legally or by custom private property; and even the trustees of the American Medical Association were, for a time, thus deceived. Just as this confusion is being cleared up, it does not seem wise for those physicians and pharmacists who desire to bring about the scientific use of medicines, to introduce it again by denunciations launched indiscriminately against two or three different classes of preparations.

Hence, at a recent meeting at which this subject was discussed, I emphasized again the distinction for which I have been fighting, lo, these twenty years. I protested against the unfairness of describing as "nostrum-users" physicians who prescribed proprietary medicines of known composition. This, however, does not warrant the misapplication of my remarks and their perversion into apparent approval of what I have always condemned —namely, the routine use of ready-made mixtures, whether proprietary or not.

The chief objection to these, as I have repeatedly pointed out, does not consist in the fact that they are proprietary, but in the fact that they are ready-made. As I have said before, and frequently, "one mixture can no more fit the pathologic conditions in every patient, than one coat can fit the curves of every back." Even when the same ingredients are associated, which is not always wise, the proportions are usually to be varied to suit the different indications—not only of different cases, but of the same case at different times. In other words, a ready-made mixture is usually, as regards the individual patient, a misfit. Either it contains unnecessary ingredients, or it omits a necessary ingredient, or the doses of the respective ingredients are unbalanced; there is too much of one, too little of another, and proper increase or decrease of dose with the progress of the case is impracticable.

These considerations apply as forcibly to a Pharmacopeial or National Formulary mixture as to any other.

Nevertheless the U. S. Pharmacopeial and N. F. formulas for mixtures are capable of considerable scientific usefulness. They are lessons in therapeutic and pharmaceutic association. They teach by example how incompatibilities may be avoided or overcome, and how medicines may be suitably flavored and colored—a matter of some practical importance, for a palatable and sightly potion will be swallowed when a nauseous and nasty looking dose will be rejected.

For this reason the National Formulary should give original formulas and not imitate proprietary preparations, many of which are highly unscientific. The "elixir digestivum comp." is a case in point. There is no advantage in mere substitution of one unscientific preparation for another, even if the N. F. mixture be equally silly and objectionable with its exemplar.

Basham's mixture (Liquor ferri et ammonii acetatis) and Dover's powder (Pulvis ipecacuanhæ et opii) are classics. Yet it is probable that the proportions in even these could be varied in individual cases with benefit to patients.

If, however, the U. S. P. and the N. F. would publish *skeleton formulas*, giving a range of quantities in which certain medicinal ingredients can eligibly be associated—thus indicating the necessary pharmaceutic expedients, but leaving the exact dosage to be ordered by the prescriber for the needs of the individual patient at the particular time—we should have the advantages, without the disadvantages, of such standard mixtures.

Three things would be necessary:

1. A standard (i. e., average) formula, to be dispensed on name without specification of quantities.

2. The indication of an optional range of variations possible, without destroying the pharmaceutic value of the formula.

3. A brief statement of the pharmaceutic necessities of the particular mixture, as a guide to the proportioning of doses.

For example, let me take the formula of a preparation not in the Pharmacopeia or N. F., which I have employed very much in rheumatic cases during many years, and have repeatedly published. It is known in the house pharmacopeias of the Jefferson Medical College Hospital, the Philadelphia Polyclinic Hospital and the Philadelphia General Hospital as Mistura ferri salicylata (Salicylated iron mixture). A standard mixture is dispensed under this title which contains 0.5 gm. of natural sodium salicylate and 0.5 c.c. of tincture of ferric chlorid to the teaspoonful, estimated at 4 c.c. Sometimes in prescribing it one wishes to increase or to diminish the iron relatively to the sodium salicylate, or vice versa. We know that this can easily be done within a range of 30 per cent. In order to prevent the precipitation of iron salicylate, two pharmaceutic expedients are necessary—the use of a slightly acid ammonium citrate solution in the vehicle (approximately half, i. e., 2 c.c. in the 4 c.c. dose), and the addition of the iron last, drop by drop, with continuous stirring, up to the required quantity. To permit any considerable increase in the iron there must be proportional increase in the citric acid content. It is also better made when a few drops of glycerin are used in each dose, and it can be flavored appropriately with a natural methyl salicylate. The standard formula is the result of experiment as to the best pharmaceutic proportions, and in this the active ingredients are as stated, with suitable quantities of glycerin, solution of ammonium citrate and oil of birch or oil of wintergreen. When no other direction is given this is dispensed.

It can be varied in two ways.

1. The best way is to write the quantities of active ingredients in full, and of the vehicles, flavor, etc., in blank, or with a *q. s.* Thus:

℞.	gm. or c.c.	
Sodium salicylate (true)	2	gr. xxx
Tincture of ferric chlorid	2 20	m. xxxvi
Oil of wintergreen (q. s.)		
Glycerin (q. s.)		or
Citric acid (q. s.)		
Solution of ammonium citrate (B. P.) q. s. ad	32	fl℥i

2. *The easiest way is to write:*

℞. Salicylated iron mixture with 10 per cent. increase of iron, 32 c.c.

Similarly, if the U. S. Pharmacopeia should state regarding Basham's mixture the range within which the proportions of tincture of chlorid of iron and solution of ammonium acetate could be varied, the prescriber could so order, leaving the pharmacist to adjust the acetic acid to the requirements of the prescription.

So, too, the National Formulary could provide that, for example, its elixir of iron, quinin and strychnin phosphate should contain the present standard quantities of these three ingredients when the physician makes no specifications of quantities, and, when specified, the exact quantity of any one or all of them that the prescriber writes for. Thus a modified prescription might read:

℞ Elix. ferr. (gr. i), quin. (gr. ss) et strych. phos. (gr. 1/120)
[These quantities to dose.] ℥iv
Sig.: One teaspoonful in water t. d. p. c.

Or any other variation desired could be indicated similarly.

This would be more work for the prescriber as well as for the dispenser, but it would check the tendency to routine and thus the resort to proprietaries, for thereby we get away from the ready-made formula which is the real ethical objection to proprietary mixtures otherwise unobjectionable, and which affects N. F. preparations equally. If, however, N. F. preparations become adjustable while proprietaries remain rigid, the superiority of the former is at once evident.

There are many other objections to the use of proprietary mixtures, the principal three of which may be summarized as follow:

1. They are not subject to standard regulation and may arbitrarily be varied.

This is less pertinent now that the pure food and drug act requires a guarantee from the manufacturer, but is still valid to a degree.

2. They profess to some degree of secret excellence, some mysterious method of collocation, or perhaps of flavoring. Such pretences are usually false, and not to be encouraged when true.

3. Perhaps the most serious objection—and from the viewpoint of pure science it over-steps all others—is that proprietorship makes unbiased discussion and honest reports difficult. This applies not only to mixtures but to "controlled" drugs in general. Paid communications are so notorious and every manufacturer or vendor of a controlled medicine does so much to put forward the good side of the remedy and to keep in the background all facts against it, that even sincere and scientific reports are often regarded with undeserved suspicion and many clinicians are absolutely deterred from praising or even mentioning useful articles, because of such control. Abolition of proprietorship would advance science, and while it would drive out many useless preparations now much-vaunted, it would increase the use made of worthy ones and make it feasible to discuss them as impartially as we do quinin or mercury.

In addition, it is possible that controlled medicines may not conform to published descriptions or formulas. This, however, takes them into the category of criminal frauds and has no connection with proprietorship or any other question we are here discussing. The dispensing of chalk for quinin by a thievish manufacturer or retailer does not affect the legitimacy of the prescription of quinin, and the similar predatory sale or dispensing of thyroid extract or brickdust for kidney substance does not affect the legitimacy of the use of kidney substance.

There is another kind of proprietorship, however, that I accept. It is a worthy one, and the only worthy one. When it is known that a certain official or unofficial drug varies much in quality as found in the market, and that certain manufacturers or dispensers put forth a trustworthy product, then I do not hesitate to specify the personal or firm name of such a manufacturer or dispenser. I know, for example, that A. and B. and C. are careful to get the best digitalis, or ergot, or belladonna and to prepare it properly. I know that X. and Y. and Z. get the cheapest stuff they can, or sail as close as possible in every way to the limits of the law; or are generally undependable. I do not hesitate to specify A.'s or B.'s or C.'s digitalis or ergot or belladonna, in order to avoid getting X.'s or Y.'s or Z.'s.

This is not a mere possibility or fancy picture, it is a sad reality. Many patients have been suffered to die through the administration of X.'s or Y.'s or Z.'s inferior digitalis, while ergot and cactus are notoriously variable, and some physicians even discard cactus altogether because of the great difficulty of getting a preparation that can be depended on. The same remarks apply to dispensing pharmacists. I know that E. and F. and G. are careful alike in purchasing and in compounding, to get the best and do the best. I know that P. and D. and Q. are careful to get the cheapest drugs or are slovenly in putting up prescriptions. I tell patients to go to E. or F. or G. and to keep away from P. and D. and Q. This, and this only, is the proprietorship—proprietorship in individual good name of person, firm or corporation, that I defend and specify, and any application of any alleged remarks of mine in any other sense, is false and misleading.

There is another form of proprietorship in which I am forced unwillingly to acquiesce, although I do not like it. It is the monopoly of certain non-secret products given by patent and trademark. This is wrong; but so long as our United States laws remain as they are the wrong can not be remedied.

If we who are striving for the correction of old errors are not careful to keep the question clear, we can not expect that those whose interest it is to confuse matters will refrain from doing all they can to "darken counsel by words void of meaning."

Let me, therefore, summarize:

1. Ready-made mixtures of rigid formula, secret or known, proprietary or public, are objectionable.

2. The National Formulary and the U. S. Pharmacopeia should make all formulas of mixtures optionally elastic.

3. Such proprietorship as is expressed in the name of an individual pharmacist or dispensing or manufacturing firm or corporation known to be generally careful and trustworthy, or to have devoted special attention to certain official or unofficial preparations of fully known character, is legitimate, and the names of such persons, firms or corporations may, with the highest ethical propriety, be specified in prescriptions.

4. Preparations tainted with *secrecy of any kind* should be avoided absolutely.

5. Known preparations that can be obtained of one manufacturer only and which are physically and chemically what they purport to be may be prescribed without impropriety, however much we may and do deprecate that fault in our laws which permits such monopoly in medicinal agents. *The law should be so altered as to abolish this form of proprietorship in medicines.*

In the foregoing discussion and summary, I have simply repeated, in somewhat different form, propositions that I have long maintained and the theoretic grounds of which were set forth in a previous paper,[1] read at the Boston session of the American Medical Association. I have been moved to repeat myself by the importance of the subject; by the unfortunate tendency of some new converts to go to extremes that tend to bring back all the old confusion; and by the misleading use to which a garbled extract from my own plea for conservatism has been put.

The forces of right and of science must not suffer themselves to be divided. The American Medical Association through The Journal and through the Council on Pharmacy and Chemistry, has well nigh accomplished what seemed at one time to be a hopeless task. No one will claim that the Council is infallible; all must admit its ability, its sincerity, its integrity, and its desire to be just. It is pursuing the right course and we can afford to await developments. Above all we must hold up its hands. We must likewise avoid disarranging its plan of campaign by ill-devised sorties at the wrong time and place and against the wrong persons.

A NEW BLOODLESS METHOD OF AMPUTATING THE ANUS AND RECTUM.

F. W. DUDLEY, M.D.
Associate Professor of Surgery, P. I. Medical School; Attending Surgeon St. Paul's Hospital.
MANILA, P. I.

The following operation which I have devised has been used many times with excellent results. It is applicable to all cases of prolapse of the anus and rectum in which amputation is advisable. It is of value in (1) prolapse of the anus and rectum combined with ulcer, when the bowel is thickened or indurated; (2) irreducible gangrenous or sloughing prolapse; (3) organic stricture; (4) adhesions preventing reduction; (5) neoplasms involving the entire thickness of the intestinal wall, and (6) in procidentia due to organic stricture, in which the stricture has reached the lowest point of the prolapse, the whole may be excised, and thus the stricture and procidentia cured at the same time. It is not intended that this operation take the place of sigmoidopexy or colopexy.

PREPARATION OF THE PATIENT.

In this, as in other operations on the rectum and anus, time spent in the proper preparation of the patient will add much to the success of the operation and to the patient's comfort subsequent to the operation. A few days' rest on the part of the patient is advisable before such an operation, when possible. He should remain on a very simple and moderate diet, the bowels being kept quite free, and he should drink freely of water. Thirty-six hours before operation two ounces of castor oil should be given. The lower bowel should be well washed out the night before and no enema given on the morning of operation.

TECHNIC OF THE OPERATION.

The patient is placed in the lithotomy position, with the buttocks well elevated. The sphincter is dilated and the bowel pulled well down by means of three forceps which are applied to the intestine. A little manipulation will enable one to work down all the redundant bowel. The rectum is packed with a long strip of gauze, about 6 cm. (2¼ in.) in width. The elevation of the buttocks allows the small intestine to gravitate back in the pelvis, and when the prolapse consists of more than three inches of bowel or there exists an archocele this step is important. If the small intestine be between the two cylinders of the prolapsed bowel it can easily be palpated between the thumb and finger and pushed up.

The protruded bowel is again well washed with soap and water, mercuric chlorid, 1 to 2,000, and sterile water. Two long Kocher or Ochsner mouse-toothed forceps are applied to the anterior wall of the prolapsed bowel in its long axis, one blade in the rectum and the other above, from the folded margin up to within 3 mm. (⅛ in.) of the skin surface, including both cylinders of the gut. These forceps are applied parallel about 1 cm. (⅜ in.) apart. Both cylinders of the bowel (all the tissue grasped by the forceps) are divided between them up to within 2 mm. (1/16 in.) of the skin margin. A catgut suture is then placed just beyond the toe of the right pair of forceps.

A hemorrhoidal clamp is applied beyond the toe of the pair of forceps to the left, the toe of the clamp pointing to the operator's left and grasping from 1.5 to 2 cm. (½ to ¾ in.) of the circumference of both folds of intestine, close to but not including the skin. The forceps are removed and the portion of bowel embraced in the clamp is cut away by shears about 3 mm. (⅛ in.) from the clamp and the remaining tissue is seared by an electric soldering iron or other cautery, after first protecting the anus and surrounding skin with a shield made of asbestos cardboard or sheet lead. The tissue embraced between the blades of the clamp is seized by the thumb and index finger of the left hand, the clamp removed and the two layers of intestine, now seared and adherent, are sewn together by a lock stitch, using No. 2 chromic catgut. The suture should be sufficiently long to continue without interruption all the way round the margin of the anus, and the end after the first knot left long. A long straight round needle should be used. The assistant holds the suture taut while the operator again applies the clamp and cautery, after which the suturing is again resumed and the process continued until the entire circumference of the bowel has been traversed, the two ends of the catgut then being tied.

No particular attention is paid to the vessels of the mesentery. The sutures may be applied before the removal of the clamp and immediately tightened on its removal, or on the removal of the clamp instead of seizing the tissues with the thumb and forefinger they may be caught with one or two mouse-toothed hemostatic forceps and the sutures applied and the forceps removed. I prefer the first mentioned method. The entire operation can be completed in from fifteen to twenty minutes or less.

If the prolapsed bowel is more than three inches in length care should be taken not to include a knuckle of the small intestine in applying the clamp. To avoid this accident, in addition to the measures spoken of in the foregoing, each bite of the cylinders of intestine should be examined between the thumb and index finger before it is grasped by the clamp. The presence of small intestine or omentum is easily detected and one meets with no trouble in crowding it upward with the examining fingers if the patient is in the proper position. In these cases several hemostatic forceps will need to be applied in turn when making the first or longitudinal incision. After the operation is completed the gauze is removed from the rectum.

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[1] Cohen, S. S.: "The Limits of Proprietorship in Materia Medica," The Journal, 1907, xlviii, p. 195.

of ammonium acetate could be varied, the prescriber could so order leaving the pharmacist to adjust the acetic acid to the requirements of the prescription.

So, too, the National Formulary could provide that, for example, its elixir of iron, quinin and strychnin phosphate should contain the present standard quantities of these three ingredients when the physician makes no specifications of quantities and, when specified, the exact quantity of any one or all of them that the prescriber writes for. Thus a modified prescription might read:

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This is not a mere possibility or fancy picture; it is a sad reality. Many patients have been suffered to die through the administration of X's or Y's or Z's *inferior* digitalis, while ergot and cactus are notoriously variable, and some physicians even discard cactus altogether because of the *great difficulty of getting a preparation* that can be depended on. The same remarks apply to dispensing pharmacists. I know that E and F, and G are careful alike in purchasing *and in compounding*, to get the best and do the best. I know that P and D, and Q are careful to get the cheapest drugs or are slovenly in putting up prescriptions. I tell patients to go to E or F or G and to keep away from P and D and Q. This, and this only, is the proprietorship—proprietorship in individual good name of person, firm or corporation that I defend and specify, and any application of any alleged remarks of mine in any other sense is false and misleading.

There is another form of proprietorship in which I am forced unwillingly to acquiesce although I do not like it. It is the monopoly of certain non-secret products given by patent and trademark. This is wrong, but so long as our United States laws remain as they are the wrong can not be remedied.

If we who are striving for the correction of old errors are not careful to keep the question clear, we can not expect that those whose interest it is to confuse matters will refrain from doing all they can to "darken counsel by words void of meaning."

Let me, therefore, summarize:

1. Ready-made mixtures of rigid formula, secret or known, proprietary or public, are objectionable.

2. The National Formulary and the U. S. Pharmacopeia should make all formulas of mixtures optionally elastic.

3. Such proprietorship as is expressed in the name of an individual pharmacist or dispensing or manufacturing firm or corporation known to be generally careful and trustworthy, or to have devoted special attention to certain official or unofficial preparations of fully known character, is legitimate, and the names of such persons, firms or corporations may, with the highest ethical propriety, be specified in prescriptions.

4. Preparations tainted with *secrecy of any kind* should be avoided absolutely.

5. Known preparations that can be obtained of *one* manufacturer only and which are physically and chemically what they purport to be may be prescribed without impropriety, however much we may and do deprecate that fault in our laws which permits such monopoly in medicinal agents. *The law should be so altered as to abolish this form of proprietorship in medicines.*

In the foregoing discussion and summary I have simply repeated in somewhat different form propositions that I have long maintained and the theoretic grounds of which were set forth in a previous paper,[1] read at the Boston session of the American Medical Association. I have been moved to repeat myself by the importance of the subject; by the unfortunate tendency of some new converts to go to extremes that tend to bring back all the old confusion; and by the misleading use to which a garbled extract from my own plea for conservatism has been put.

The forces of right and of science must not suffer themselves to be divided. The American Medical Association through The Journal and through the Council on Pharmacy and Chemistry, has well nigh accomplished what seemed at one time to be a hopeless task. No one will claim that the Council is infallible; all must admit its ability, its sincerity, its integrity, and its desire to be just. It is pursuing the right course and we can afford to await developments. Above all we must hold up its hands. We must likewise avoid disarranging its plan of campaign by ill-devised sorties at the wrong time and place and against the wrong persons.

A NEW BLOODLESS METHOD OF AMPUTATING THE ANUS AND RECTUM.

F. W. DUDLEY, M.D.
Associate Professor of Surgery, P. I. Medical School; Attending Surgeon St. Paul's Hospital.
MANILA, P. I.

The following operation which I have devised has been used many times with excellent results. It is applicable to all cases of prolapse of the anus and rectum in which amputation is advisable. It is of value in (1) prolapse of the anus and rectum combined with ulcer, when the bowel is thickened or indurated; (2) irreducible gangrenous or sloughing prolapse; (3) organic stricture; (4) adhesions preventing reduction; (5) neoplasms involving the entire thickness of the intestinal wall, and (6) in procidentia due to organic stricture, in which the stricture has reached the lowest point of the prolapse, the whole may be excised, and thus the stricture and procidentia cured at the same time. It is not intended that this operation take the place of sigmoidopexy or colopexy.

PREPARATION OF THE PATIENT.

In this, as in other operations on the rectum and anus, time spent in the proper preparation of the patient will add much to the success of the operation and to the patient's comfort subsequent to the operation. A few days' rest on the part of the patient is advisable before such an operation, when possible. He should remain on a very simple and moderate diet, the bowels being kept quite free, and he should drink freely of water. Thirty-six hours before operation two ounces of castor oil should be given. The lower bowel should be well washed out the night before and no enema given on the morning of operation.

TECHNIC OF THE OPERATION.

The patient is placed in the lithotomy position, with the buttocks well elevated. The sphincter is dilated and the bowel pulled well down by means of three forceps which are applied to the intestine. A little manipulation will enable one to work down all the redundant bowel. The rectum is packed with a long strip of gauze, about 6 cm. (2¼ in.) in width. The elevation of the buttocks allows the small intestine to gravitate back in the pelvis, and when the prolapse consists of more than three inches of bowel or there exists an archocele this step is important. If the small intestine be between the two cylinders of the prolapsed bowel it can easily be palpated between the thumb and finger and pushed up.

The protruded bowel is again well washed with soap and water, mercuric chlorid, 1 to 2,000, and sterile water. Two long Kocher or Ochsner mouse-toothed forceps are applied to the anterior wall of the prolapsed bowel in its long axis, one blade in the rectum and the other above, from the folded margin up to within 3 mm. (⅛ in.) of the skin surface, including both cylinders of the gut. These forceps are applied parallel about 1 cm. (⅜ in.) apart. Both cylinders of the bowel (all the tissue grasped by the forceps) are divided between them up to within 2 mm. (1/16 in.) of the skin margin. A catgut suture is then placed just beyond the toe of the right pair of forceps.

A hemorrhoidal clamp is applied beyond the toe of the pair of forceps to the left, the toe of the clamp pointing to the operator's left and grasping from 1.5 to 2 cm. (½ to ¾ in.) of the circumference of both folds of intestine, close to but not including the skin. The forceps are removed and the portion of bowel embraced in the clamp is cut away by shears about 3 mm. (⅛ in.) from the clamp and the remaining tissue is seared by an electric soldering iron or other cautery, after first protecting the anus and surrounding skin with a shield made of asbestos cardboard or sheet lead. The tissue embraced between the blades of the clamp is seized by the thumb and index finger of the left hand, the clamp removed and the two layers of intestine, now seared and adherent, are sewn together by a lock stitch, using No. 2 chromic catgut. The suture should be sufficiently long to continue without interruption all the way round the margin of the anus, and the end after the first knot left long. A long straight round needle should be used. The assistant holds the suture taut while the operator again applies the clamp and cautery, after which the suturing is again resumed and the process continued until the entire circumference of the bowel has been traversed, the two ends of the catgut then being tied.

No particular attention is paid to the vessels of the mesentery. The sutures may be applied before the removal of the clamp and immediately tightened on its removal, or on the removal of the clamp instead of seizing the tissues with the thumb and forefinger they may be caught with one or two mouse-toothed hemostatic forceps and the sutures applied and the forceps removed. I prefer the first mentioned method. The entire operation can be completed in from fifteen to twenty minutes or less.

If the prolapsed bowel is more than three inches in length care should be taken not to include a knuckle of the small intestine in applying the clamp. To avoid this accident, in addition to the measures spoken of in the foregoing, each bite of the cylinders of intestine should be examined between the thumb and index finger before it is grasped by the clamp. The presence of small intestine or omentum is easily detected and one meets with no trouble in crowding it upward with the examining fingers if the patient is in the proper position. In these cases several hemostatic forceps will need to be applied in turn when making the first or longitudinal incision. After the operation is completed the gauze is removed from the rectum.

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[1] Cohen, S. S.: "The Limits of Proprietorship in Materia Medica." The Journal, 1907, xlviii, p. 195.

The dressing consists of sterilized vaselin and a few squares of gauze held in place with a T bandage. No tube or other dressing is placed in the rectum. As a rule no pain is experienced; if there is any, one hypodermic injection of 14 mg. (1/5 gr.) morphin given as soon as the patient complains will be all that is required.

In these operations, as in hemorrhoid operations, burning the skin should be avoided. Such burns are extremely painful and the patient will often complain bitterly of them long after he is entirely well from the operation.

AFTER-TREATMENT.

The after-treatment consists of a limited quantity of liquid or light diet for seven days. An attempt was formerly made to confine the bowels by means of opium until the eighth day, when they were moved without pain. In several cases the bowels moved voluntarily on the second and third days without pain or subsequent trouble resulting therefrom. The bowels are now moved in all these cases on the third day, two ounces of castor oil being given. The patient is allowed up and about thereafter and the bowels made to move daily.

It is practically impossible to infect the peritoneal cavity by this method, not an inconsiderable advantage when operating in this region. There is no narrowing of the anal orifice. In cases in which this seems desirable, three or four longitudinal scars 3 mm. (1/8 in.) in width of the mucous membrane of the gut, after the operation is completed, will accomplish this. In these cases the wound usually is thoroughly healed about the tenth day and the patients are discharged from the hospital fourteen days after operation.

THE RELATIVE MERITS OF THE OPERATIONS FOR HEMORRHOIDS*

J. D. SINGLEY, A.M., M.D.

Surgeon to the Pittsburg Hospital; Associate Professor of Surgery and Clinical Surgery, University of Pittsburg; Director of Mage Pathological Institute, Mercy Hospital
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Is there a mortality attached to any of the classical operations for hemorrhoids? Undoubtedly there is. A word of protest against the rather common statement by surgeons at least that the mortality of a given operation is practically *nil*. However small, there is a definite mortality for any surgical procedure to be weighed in the balance with the risk to life if no operation is done.

With special reference to the mortality and the subsequent condition of the patient, I wish to direct attention to a consideration of the relative merits and demerits of the three well-recognized types of operation for hemorrhoids: (1) the ligature method, (2) the Whitehead operation, and (3) the clamp and cautery operation. They are too well known to require description.

THE LIGATURE METHOD.

The pathologic condition about the lower end of the rectum in hemorrhoids—dilated, elongated and tortuous veins often filled with simple or infective thrombi—and the impossibility of securing an operative field even approximately free from bacteria afford excellent grounds for anticipating an occasional serious postoperative complication which may and occasionally does result in death. The puncture of a needle or a snip of the scissors can readily carry the *Bacillus coli communis* (whose function as an infective agent in all parts of the body is being recognized more and more) or other pathogenic bacteria into a vein and produce an infectious thrombophlebitis with subsequent embolism and death. Granted a clean field, the same process may be set up, for the thrombi in the hemorrhoidal veins are frequently already infected, presumably with the *B. coli communis*, and granted that the thrombi are simple non-infected clots, such an embolus may result seriously.

That these dangers are not purely theoretic ones I am convinced from having observed one fatal case of pyemia and a number of cases of simple embolism following this apparently simple operation in the hands of capable and clean operators. In the cases in which simple embolism has been observed the emboli fortunately have lodged in the veins of the leg, but they may just as readily find a more vital spot.

There is certainly a definite, though low, mortality for this operation in the best hands, and it should be discarded in favor of other procedures provided they promise less risk to life.

THE WHITEHEAD OPERATION.

This is a most attractive method from the standpoint of the operator. It appeals to him as a more complete and exact surgical procedure in that it removes by nice dissection the entire pile-bearing area and leaves a neatly closed wound. There can be no doubt, however, but that the same possibilities for danger exist in this operation as have been pointed out for the ligature method, with the same definite mortality as an immediate result.

The common objection to the operation is based on the severity of the hemorrhage in patients already more or less debilitated by loss of blood. Improperly performed, this is a valid objection, but properly carried out it does not hold. Severe hemorrhage is produced by dissecting up the mucous membrane containing the piles about the entire circumference of the rectum before applying the sutures. If the dissection is carried up beyond the level of the hemorrhoids at but one point and the mucous membrane is divided and immediately sutured to the skin edge, thus controlling hemorrhage at that point, and if this be carried out step by step completely around the rectum the loss of blood will be slight.

The ultimate results of this operation are excellent as a rule, but they are by no means uniformly so. In a certain number of cases the patients develop stricture of the anus of greater or less severity, a most distressing condition. This results from the contraction of an annular cicatrix which it is impossible to avoid, for complete primary union practically never occurs. On the other hand, some of the patients have incontinence of feces from interference with the nerve supply of the sphincter. In either case the patient has made a poor exchange for his hemorrhoids.

The real objections, then, to this operation which should far outweigh its operative merits, are (1) the danger of simple or infective embolism, (2) the risk of stricture and (3) the risk of incontinence.

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Whitehead operations. The danger of infection is reduced to a minimum, since there is no wound of the mucous membrane, except that produced by the cautery, which destroys bacteria and at the same time seals lymphatics and blood vessels. The hemorrhoidal masses should all be caught and brought down before any of them are cauterized. If this is not done it is almost impossible, while bringing down other masses, to avoid tearing open a previously cauterized stump, thus inviting both hemorrhage and infection. The clamp should always be applied in the long axis of the bowel so that the resulting cicatrices are in its long axis instead of transverse. If applied transversely and there are many hemorrhoids we produce an annular cicatrix and the same conditions result as in the Whitehead operation with the same liability to stricture.

For the purpose of preventing hemorrhage and infection it is advisable to avoid cutting off the hemorrhoid after applying the clamp. If cut, an avenue of infection is opened up and some vessel thus divided may be overlooked in cauterizing. The entire mass should, instead, be slowly burned away with the cautery at a dull red heat. The hemorrhoids should be gently handled at all times lest a portion of clot be loosened up and find its way into the circulation. The bowels should be confined for three or four days following operation. When they are moved there is almost certain to be some slight tearing of cicatrices, but by this time Nature has had an opportunity to wall off the area securely with inflammatory exudate and thus protect against serious infection.

That any of these operations are efficient in removing the pathology present in hemorrhoids can not be disputed, and each of them finds favor with operators of unquestioned ability. While the clamp and cautery is probably the least attractive from a strictly operative standpoint, the arguments advanced in its favor and the results obtained with it appeal to me as indicating it to be the operation of choice in almost every case.

RANULA AND OTHER DISEASES OF THE SALIVARY GLANDULAR SYSTEM.*

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Ranula is a soft cystic tumor in the floor of the mouth, unilateral at first, but later, as the cyst enlarges, perhaps passing beyond the median line. The name "ranula" is only descriptive of appearance, having no significance otherwise.

Formerly ranula was, and is at present by some, supposed to be a cyst containing pent-up salivary gland secretions from stenosis of Wharton's or Rivini's ducts, as a result of inflammation in some part of the duct or its meatus; or from occlusion of the duct by an accumulation of salivary calculus.

Bland Sutton says: "There is at the present time a strong tendency to restrict the name 'ranula' to cysts arising in connection with ducts of the three sets of salivary glands opening into the mouth, and to designate them as submaxillary, sublingual and parotid ranulæ according to the gland affected." Continuing, he says: "In the majority of cases ranulæ are probably retention cysts due to obstruction of a duct. They are common in connection with the submaxillary and sublingual glands." Again, he says: "Occasionally the obstruction is caused by a calculus impacted in the orifice of a duct, but cases come under observation in which *the duct is not completely obstructed, yet the fluid is retained.*" "It is reasonable to believe that ranulæ sometimes arise independently of obstruction to the main duct, and as in the case of so-called pancreatic ranulæ, observation supports the view that there is in all probability a pathologic cause apart from mere obstruction concerned in their production."

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The following is culled from Hippel:[1] "Before first half of 1800 all tumors of the floor of the mouth were called ranulæ." Hippel also says that Diemerbroeck was the first to offer the theory that ranula was due to retention of saliva in Wharton's duct through narrowing or closure of the duct. Dupuytren thought of the possibility of ranula being mucous gland cysts.

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The nature of ranulæ which have no cilia on their walls has been worked out by Imbert and Jeanbrau, Veau, Thomas and Guibe. They think that such ranulæ are embryonal remains of epithelial origin, either from mucous membrane of the duct, or parts of the sublingual salivary glands cut off from the main gland.

Suzanne and Hippel showed ranula to be of sublingual glandular origin, a primary interstitial chronic inflammation, the connective tissue formed compressing the ducts in the gland, a cyst being the result. The pressure causes atrophy of glandular tissue and a confluence of the lobules, usually into a unilocular cyst.

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* Read in the Section on Stomatology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

[1] Arch. f. klin. Chir. Bd. 55.

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Pauli and Tellaux named a condition of distended Wharton's duct which broke into the surrounding tissues thus constituting not a ranula but a ptyalocele. Neumann discovered ciliated epithelium, lining the wall of ranula and as the Bochdaleck duct was the only ciliated epithelium-lined gland in the floor of the mouth, then it must be the starting point of ranula.

The nature of ranulæ which have no cilia on their walls has been worked out by Imbert and Jeanbrau, Veau, Thomas and Guibe. They think that such ranulæ are embryonal remains of epithelial origin, either from mucous membrane of the duct, or parts of the sublingual salivary glands cut off from the main gland.

Suzanne and Hippel showed ranula to be of sublingual glandular origin, a primary interstitial chronic inflammation, the connective tissue formed compressing the ducts in the gland, a cyst being the result. The pressure causes atrophy of glandular tissue and a confluence of the lobules, usually into a unilocular cyst.

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* Read in the Section on Stomatology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

[1] Arch. f. klin. Chir. Bd. 55.

Kross demonstrated a connection between such a cyst and the sublingual gland. This origin best explains the development of the cyst backward and downward through the fibers of the mylohyoid muscle.

Morestin found parts of the sublingual gland normally in between the fibers of the muscle, also parts of it penetrating through the muscle. This, he believes, could easily explain the development of ranula under the chin. One case of ranula of this nature came under my observation at St. Luke's Hospital, Chicago, through the courtesy of Dr. John C. Hollister. The cyst could easily be observed both in the mouth and submentally.

Hippel sums up his conclusions thus:

1. Ranula is a retention cyst of the sublingual gland, also rarely of the incisive glands.

2. Ranulæ have their beginnings in the small ducts of the glands.

3. The exciting cause is a chronic interstitial inflammation of the gland which leads to a stenosis of the smaller ducts.

4. It enlarges by retained secretions, later by proliferation, degeneration and desquamation of the epithelium of the ducts and by transudation from new-formed capillaries.

5. Secondarily the gland lobules distal to the stenosis die of pressure atrophy.

6. The submental and acute ranulæ are only variants of the usual ranula.

7. A radical operation must include removal of the cyst and the entire sublingual gland (for its cure).

8. In infrequent and exceptional cases cysts of the lingual duct or its ramifications present the clinical aspects of ranulæ.

I have seen a number of ranula, and formerly was of the opinion that they had their origin in Wharton's duct or in the ducts of Rivini, but having found no cases of ranula on the floor of the mouth which prevented the passage of a probe throughout the entire length of Wharton's duct, and not having seen a case in which the sublingual or submaxillary gland enlarged or became painful on taking food, these observations led me to believe that the theory pretty generally held that ranula is due to dilatation of Wharton's duct from stenosis or from plugging of the duct by foreign substances is fallacious. Again I saw one case as a result of stenosis of Stenson's duct without the formation of a retention cyst, but with the formation of a ptyalocele, indicating that saliva will find exit in all cases, though there be complete stenosis of the duct. Also I have seen numerous cases of stone in Wharton's duct, many times larger than the normal lumen of the duct, which seemingly in no wise inhibited the flow of the submaxillary gland fluid. The result of these observations led me to the conclusion that tumors of the nature of ranula in the floor of the mouth are either cystic degeneration of parts of the sublingual gland separated from the main organ, cysts originating in the gland itself or cysts originating in the mucous glands in the floor of the mouth. The conclusions of Hippel regarding the origin of ranula are very convincing. I have seen but few cysts originating in Blandin-Nuhn gland, and these bear but slight resemblance to the larger cysts on the floor of the mouth. Those coming under my observation have been quite small and, from their situation under the tip of the tongue, resemble the tumor known as ranula, not in locality, but only in the fact that they are cysts lying under a thin layer of mucous membrane.

Specific infectious parotitis is the most common disease of the salivary glands, but is one which does not specially interest the stomatologist and therefore will not be presented.

Following operations on or injury or disease of the urinary tract or genital organs, acute inflammation of the parotid may follow which simulates infectious epidemic parotitis. This condition, however, is most commonly met in adults, and the tendency to suppuration is much greater than in the specific disease. So also there is an acute inflammation of the parotid of a similar but of even a more virulent nature, generally resulting in suppuration, which is a metastatic involvement of the gland due to septic infective fevers. Parotitis is sometimes seen as a result of mercurial poisoning.

When operating on very sensitive dentine I have seen a few cases of functional disturbances, in the nature of a colic, due to spasm of the duct of Stenson, which gave rise to temporary non-inflammatory distention of the parotid, due to the damming up of the saliva in the gland, the saliva being rapidly secreted through the irritation caused by the excavation of the hypersensitive tooth structure and not voided owing to the spasm in the duct, causing much pain and distention of gland. After a comparatively short period, subsequent to the operation, the spasm subsides and with it the pain, likewise the enlargement.

I have seen two cases of acute inflammation of the parotid which could not be traced to any specific cause. The gland in both of these cases suddenly became swollen, painful and tender to pressure. Stenson's duct was patulous, the meatus of the duct was normal, and no stones or other obstruction could be detected. There was a moderate amount of the salivary fluid voided, but no pus could be expressed through the meatus. The gland was not more painful when the patient partook of food than at other times. The temperature was a trifle above normal. Both patients were women, the age of one being thirty-three years, the other fifty-two. A year previous to the attack in the elder woman there had been an appendicectomy; otherwise there had been no injury or surgical operations or ill health in either case. Under hot applications and saline cathartics the condition subsided in a few days. Eight years have elapsed since the attack in one case and four years in the other with no subsequent attacks. I regret that no microscopic examination of the secretions from the gland was made in either case. I am of the opinion that the condition was due to a catarrhal infection of the gland reaching the organ from the mouth, though the duct did not appear to participate in the inflammation.

Chronic inflammation resulting in enlargement and hardening of the glands is, with the exception of epidemic infectious parotitis, the most common disease of the salivary glands. I have seen a few such cases involving the submaxillary gland, but never any involving the parotid or sublingual. Cases have been reported, however, in which both of these glands were involved. This inflammatory condition is supposed to be an infection communicated to the gland from the mouth, ascending through the duct to the gland. The enlargement of the gland comes on very slowly and is not painful, therefore the patient will probably not consult a physician until its size causes some disfigurement. E. von Bergmann believes that most, if not all, salivary gland inflammations originate from infection passing to the gland from the mouth.

Two typical cases of chronic inflammation of the salivary glands are reported by Dr. Frederick Kroiss.[2] In these cases the enlargement of the glands was slow, as it always is when chronicity is observed, as before mentioned. Pus was voided from the duct in one case; in the other it was evacuated by incision three weeks after it came under Dr. Kroiss's observation. In both of these cases the gland was removed and macroscopic observation showed it to be twice as large as normal, connective tissue much increased, consistency very much increased. No abscess was to be seen with the naked eye. Near the periphery lay a small yellowish white, easily crushed concretion, imbedded in the tissue. Microscopic examination showed the capsule and septæ eight times increased. The single gland lobules were widely separated and the connective tissue poor in nuclei. The parenchyma was replaced by fat; the small ducts of the gland were surrounded and infiltrated by leucocytes. Atrophy of the parenchyma was seen mostly near the main branches of the ducts, less at the periphery. The tissue in which the concretion lay showed no changes different from the rest. The ductus maximus was very much enlarged; near the caruncle were many patches of swollen cells, but in other spots no epithelium remained. The mass which the ducts contained was composed of the desquamated cells, combined with the secretions, together with many polymorphonuclear leucocytes. The main duct was throughout its length surrounded by a round-cell infiltration, even to the furthest ramifications, and filled with a slimy pus. The cell tubules were small, in many places wanting, their places being taken by connective tissue.

I have seen several cases of chronic inflammation of the submaxillary glands which tally very closely with these cases of Kroiss, but have also seen a few cases which in the later stages of the disease were similar, but the early history of preceding enlargement and induration of the gland was absent. It is possible that the enlargement of the gland had not been great and on this account had been unnoticed by the patient. I am of the opinion, however, that inflammation of the submaxillary gland may be due to an inflammation in the duct set up by rough stones in the duct, the inflammation having been communicated to the gland from the infected and inflamed area in the duct through continuity of tissue, or through pyogenic organisms ascending to the gland through the duct from its inflamed area. Two cases are here given to illustrate.

Patient.—A woman aged 33, first consulted me August, 1902. She had had periodically painful swelling of the left submaxillary gland for ten years.

Examination.—The condition present when I first saw her was great enlargement of the left submaxillary gland, with swelling along the line of Wharton's duct, the inflammation of the duct having extended to the floor of the mouth and tongue on the affected side, seriously interfering with swallowing.

Course of Disease.—On the third day there was a copious flow of pus from Wharton's duct when the gland was pressed on. With the discharge of pus the pain and swelling in the mouth subsided, the gland decreased in size, but remained somewhat enlarged and hardened; it was also tender to pressure. At more or less frequent intervals between June, 1902, and March, 1903, there were mild repetitions of the former attack; pus at these times could be expressed from the meatus of the duct. During one of these attacks, in seeking a cause for the condition, in passing my finger over the line of Wharton's duct I found about half-way between the meatus and the gland an enlargement, but was unable, owing to the swollen condition to determine positively by palpation whether the enlargement was due to a stone or whether it was an indurated enlargement of the duct. Because it was impossible at this time to introduce a sound into the duct on account of the pain inflicted, an exploring needle was passed through the overlying tissue and the wall of the duct. When the lumen of the duct was reached the needle came in contact with an obstruction, which, through the sensation communicated to the fingers, was easily recognized as a stone.

Operation and Description of Stone.—On March 3, 1903, the swelling having subsided, I cut down on the stone and removed it. The stone was of dark yellow color, fourteen mm. in length, five mm. in its greatest diameter and three mm. in its least diameter. It weighed dry eleven grains. Its surface was rough, with short, spinous processes all over it. These processes were imbedded in the wall of the duct, and its removal was made difficult thereby. Following the removal of the stone, the gland and duct became normal in size and consistency and remained so during the five years that have elapsed.

Subsequent History.—Four years later the opposite gland became enlarged and painful, and pus could be expressed from the meatus of the duct. A sound was easily passed in this duct. In about the same relative position as before I found another stone. It was removed and proved to be of the same nature as the first, but smaller. Nearly one year has elapsed since its removal, and at this time both gland and duct are in seemingly healthy condition.

By some these two cases would be classified under the head of chronic inflammation of the salivary glands, the stone found in the duct being considered only an incident in the progress of the disease, which supposedly originated in the gland as the result of disease in this organ. If this reasoning be correct, then in time there will be further manifestation of disease in both of these glands. In one of the cases reported by Kroiss there was, following the incision and evacuation of the pus, a normal condition of the gland and duct for a period of four years; then the gland again became involved in a similar attack. It was then removed with the findings indicated. The similarity between Kroiss's case and mine, even to the subsequent involvement of the opposite gland, is readily observed, except that there was no stone in the duct in his case, but a concretion was found in the gland. Indeed in most of the cases I have seen reported in which the gland was extirpated for the cure of this condition, concretions were found either in the gland or in its ductus maximus. A period of five years has elapsed with immunity for symptoms since removal of the first stone in my case; therefore it seems reasonable to conclude that the immediate cause of the gland involvement was the irritation of the rough stone. Certainly one would not have been justified in removal of the gland, as subsequent results have proven.

By some, stones in the ducts of the salivary glands are supposed to result from the calcium of the salivary fluid being deposited on foreign substances, including bacteria, which have entered the duct from the mouth, supplying a nidus about which the lime is built. The following quotation is made in reference to the origin of these lime depositions from Hektoen's English edition of Durck's General Pathologic Histology:

"Calcification often develops in dead portions of tissue or in masses of inspissated secretion. In this wise concretions are formed in the excretory ducts of salivary glands and of the pancreas, consisting of desquamated epithelium, amalgamated into a solid mass by the inspissated secretion."

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[2] Beitr. f. klin. Chir., xlvii, 470-530, 1905.

Operation.—There was no swelling or redness over the mastoid region, neither were there any outward indications of cerebral complications or thrombosis. The auditory canal was cleared of polypi, and an incision made over the mastoid While separating the periosteum from the posterior superior wall of the osseous meatus a quantity of foul smelling pus under pressure was evacuated This came from the mastoid cells and had opened under the periosteum of the osseous meatus, it was packed off and the mastoid cells entered directly through a hard lamella of bone, when more pus of the same nature was freed The opening was enlarged, and a quantity of granulation tissue and several small sequestra of bone were removed The sigmoid sinus was exposed for an inch and a half past the knee into the lateral sinus The sinus was found to contain no blood and without effort a probe was passed through an opening in its wall which was gangrenous and irregularly discolored. The opening into the antrum was next enlarged and the superior posterior wall of the osseous meatus chiseled away, much of which was found to be carious. The bone of the facial canal was unaffected My intention was to perform a radical operation with the removal of the contents of the tympanic cavity, but after finding that the tegmina antri and tympani were intact and that the infective process had not extended in that direction I satisfied myself with a thorough curettage of the antrum and aditus, and on account of the grave condition of the patient, directed my attention to the sinus The sinus was slit open, and some foul pus and débris liberated. A blunt curette was passed towards the bulb followed by free bleeding. The sinus was then curetted in the opposite direction for a distance of three and a quarter inches with but slight bleeding, it was then packed in both directions The advisability of ligating the jugular at this time was considered, but on account of the free hemorrhage obtained from the inferior petrosal sinus or jugular vein and the very poor condition of the patient, it was deemed best to await further developments Immediately following the operation the patient was exceedingly weak with temperature of 103.2 F., pulse 138 and respirations 28

Postoperative History.—October 10: Temperature normal with pulse 108 and respirations 20. Patient vomited all fluids and heroin was given to relieve the pain which seemed to be localized in the ear

October 11. Condition same. Temperature normal, vomited often, complained of severe pain in head Wound dressed with little bleeding, from the sinus. Abdominal pains

October 12: Patient more quiet Temperature rose for a short interval from normal to 100.2 F Pulse from 96 to 110 Respirations normal, no vomiting: eggs and broth retained. Vaginal discharge examined, and found to contain gonococci. Blood showed 15 200 leucocytes and 84 per cent. polynuclears.

October 13: At 6 a m patient had a chill lasting twenty minutes; at 10 a m., temperature was 105.4 F., pulse 160. At 12 o'clock temperature was 101.8 F. and at 2 p. m. it was normal with pulse 120 and respirations 20. Heart and lungs examined and found to be normal, fundus of eyes normal There was no question now that the thrombosis had again become active and that infective material was being liberated into the circulation, either directly by the jugular vein or through the torcular Herophili to the lateral sinus of the opposite side.

October 14: Patient was very restless, complained of pains in the back and abdomen, but an examination failed to reveal an infection of any organ. At 5 p. m she had a chill lasting half an hour and at 7 p. m the temperature was 105.3 F, pulse 168, respiration 34 At 10 m temperature was 100 F. and pulse 134.

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October 15: Very restless and irritable, pain over the right side of head. Rectal saline infusion of 500 c.c., was used with apparent benefit. At 2 a. m. she had a chill followed by a temperature of 104.8 F. returning to normal at 6 a. m.

October 16. Patient very depressed, could not retain nourishment At 4 p m. she lapsed into a state of complete collapse, respirations and pulse appearently ceasing. She was revived by a high rectal saline infusion and hypodermics of nitroglycerin strychnin and brandy, with a return to consciousness in about 20 minutes Temperature did not rise over 100.8 F., during the day and was subnormal most of the time—97.2 F White blood cells, 15,200; polynuclears, 82 per cent

October 17 Nutrient enema of whiskey, peptonized milk and egg Could not retain food on the stomach. At 12 m. she had a chill; highest temperature, 105.6 F.: pulse 168. Saline rectal infusion followed by marked improvement, and later enema of coffee and whiskey. At 11 p. m. patient had so improved that it was decided to resect the jugular above and below the previous point of ligation.

Third Operation.—The vein was ligated well above the entrance to the facial vein and resected to within one inch above the clavicle A small clot was dislodged from the upper part of the jugular after removing the ligature, but there was no evidence of the infective process having extended down to the point of ligation, this was confirmed later for the wound healed within a few days with the aid of small cigarette drain

Postoperative History.—October 18: At 6 a. m. patient had a severe chill lasting 59 minutes Saline infusion of 250 c c was given and later an enema of coffee and whiskey; all were retained. She became delirious, the temperature rising to 104.4 F and pulse 162; descending to 97 F. with pulse 101.

October 19 Patient irritable and restless; heroin given She retained on stomach peptonized milk and whiskey which was used as freely as possible At 1 a. m. she had a chill lasting 50 minutes, temperature rising to 105.6 F., pulse 193. respiration 28 After each rise of temperature it always descended in from two to six hours to normal or subnormal, the pulse remaining comparatively high

October 20: Patient retained some nourishment by stomach. The lungs, heart, kidneys, liver, urine, etc., were found to be normal, and fetus alive though she complained of abdominal pains. She had a chill at 4 p. m., temperature 106.4 F., pulse 166. At 10 p m temperature was normal.

October 21: Patient was delirious, restless and vomited continually. At 10 a. m. the temperature was 106.4 F., which descended slowly, reaching normal at 6 p m. A bacteriologic examination was made The arm over the median cephalic vein was thoroughly sterilized, and the vein exposed, from which blood, uncontaminated from external sources, was extracted After incubation it was shown to contain a pure culture of *Staphylococcus pyogenes aureus*. From the above culture a vaccine was made, according to Wright's method, for the purpose of combating her general septic condition. It was never used on account of subsequent developments.

October 22: Patient vomited continuously, was delirious much of the time and general condition very poor. At 12 m., after a chill, her temperature rose to 106.2 F., pulse 180, and respiration 36 The wound was dressed each day and the sinus irrigated and packed. The foul odor so noticeable at first had decreased, the probe and the blunt curette were used in the lateral sinus posteriorly as far as the torcular without showing a trace of blood There was no bleeding noticeable from the direction of the bulb where the inferior petrosal sinus empties.

October 23: Patient had a chill, the temperature rising to 107.2 F., pulse 190, respiration 38 Later the temperature was 97.4 F, and pulse 104 Fetus was alive.

October 24 Patient very weak; vomited all food. Chill, temperature to 105.4 F., down to 97.2 F.

ober 25 At 10 a. m the patient's temperature rose to
about 200. Lowest temperature 97.2 and pulse
p m the patient was removed to the operating
intention of opening the torcular Herophili
tal protuberance

Analyses of all these cysts show, not saliva, but some other substance. What are these cysts? If they are from the salivary ducts, why does the saliva entirely disappear, as shown by microscopic examination, none of the elements of normal saliva being revealed? And why do we find mucus in quantities and its elements in these cysts? Are they retention cysts, or are they true cystomata?

DR. VIDA A. LATHAM, Chicago: In Dr. Gilmer's experience are not these ranulæ or cystic growths more common on the left than on the right side? Can he explain it from the anatomy? I reported thirty such cases for the Massachusetts State Dental Society and I think that only two were located on the right side. I do not known why. This report was published in the *Dental Cosmos*, 1906. The pressure of badly fitting plates seems to have some injurious effect. I have had four patients with this trouble in one week, and each one was relieved as soon as I could reduce the stenosis and remove the plate. A glandular secretion, together with the mucous or salivary secretion, forms a kind of colloid secretion. It is ropy and thick and of different color; it does not look like mucus, but more like the colloid secretion in thyroid tumors. The dilatation causes stenosis through spasm of the contractile tissue of the duct, just as pressure would cause a breaking up of a fluid. It is to be hoped that dentists and medical men will cease to employ iodin and other stimulating agents in these conditions. In one of the worst cases of this kind that I ever saw the surgeon consulted wanted to incise the cyst right away as a suppurating gland. To this the patient would not consent, so the surgeon painted the cyst with iodin. At 2 o'clock in the morning I was called to see a desperate case of dyspnea from the swelling that had occurred, which was so great that the respiratory apparatus was practically shut off. Only by inserting tubes and administering oxygen could relief be obtained. Another case of sublingual cyst was treated in a similar manner; the tongue swelled and prevented proper respiration. That kind of treatment should be abolished in these cases. Dead teeth, especially the lower first molars, also cause obscure conditions. This possibility should be borne in mind in our differential diagnoses. A patient came for operation for removal of the mandible; when we explored it was agreed that the trouble was caused by dead teeth. We opened up the molar and passed a fine wire through and on into the submaxillary gland and found that this was not a case of malignant disease, but simply one of dead teeth with necrosis and a sinus. The patient promptly recovered when the pulp canals were cleared and filled.

DR. HERBERT A. POTTS, Chicago: The condition which seems to me more nearly to merit the name "ranula" is a transparent, thin walled, chronic tumor developing in the floor of the mouth, microscopic sections of which show either the whole or parts of the sublingual, not the submaxillary, gland plastered out over the walls of the cyst. The cyst walls are noninflammatory and very thin, and rich in capillary supply. It is to this that the name "ranula," if it is to be continued at all, should, I think, be applied. Bernard and Recklinghausen have been unable to produce ranula by ligation of Wharton's duct. In this connection we are reminded that ligation of the ureter does not cause a cystic kidney. The large cystic kidney is not due to the sudden shutting off of the normal secretion of the gland, but to a chronic condition. The sudden shutting off of the excretion of the gland causes its atrophy. Suzanne and Hippel have shown this in a large number of cases. It has also been demonstrated by anatomic dissection that, in the normal individual portions of the sublingual gland have been found, as stated by Dr. Gilmer, in the fibers of the mylohyoid muscle, also beyond that. It is to this fact that we may as[illegible]be the tumors appearing under the chin rather than the [illegible] until they become so large that the fibers have [illegible] have been visible both inside and out. [illegible] for a long time unobserved. They [illegible] The application of iodin as well as [illegible]uses a sudden effusion into the [illegible]llary blood vessels around it. [illegible] series of, I believe, forty [illegible] pass a probe into a [illegible]tion whatever between that and the ranula. These tumors are easily removed. They are covered, and very loosely, by the mucous membrane of the mouth. In some cases, when the patient closes his mouth, the tumor may be seen beneath the chin; when he opens his mouth it is gone and is in the mouth. In most cases, after incision of the mucous membrane, they may be shelled out with the fingers. Of course, they may become infected, and then the proposition becomes a difficult one.

In view of the fact that these tumors seem to merit the name "ranula" more than any other, I think that if the term can not be excluded from our nomenclature it should at least be confined to these. In THE JOURNAL A. M. A., May 30, 1908, the term "acute ranula" is applied to an abscess which was opened and was healed within a few days. In regard to Mikulicz's disease, the etiology of which is rather obscure, a number of the cases which have been collected, about 30 in all, I believe, were found to be simultaneous with enlargement and involvement of the lymph glands and lymphatics. The blood findings in many of these cases are such as are observed not only in leukemia, but in pseudoleukemia. The microscopic sections of local parts of the salivary glands show an increase in lymphoid material, and this increase is at the expense of the parenchyma of the gland. It is rather strange, too, that the submaxillary gland, in the substance of which it is doubtful if there is any lymphatic tissue, although there are a few lymph glands at the bifurcation of the artery which supplies the gland, also enlarges in this condition either on one side or both sides, usually on both. Mikulicz has described the symmetrical swelling of these glands, in which this gland is also involved.

DR. THOMAS L. GILMER: In answer to Dr. Latham, I have found these conditions existing on the left more frequently than on the right side, but do not know the reason.

THROMBOSIS OF SUPERIOR LONGITUDINAL AND LATERAL SINUSES COMPLICATED BY PREGNANCY.

TREATED BY OPENING THE TORCULAR HEROPHILI.

LOUIS C. DEANE, M.D.
SAN FRANCISCO.

The following case is reported somewhat fully, for the following reasons: First, it is an extreme case of uncomplicated infective thrombosis of the superior longitudinal and lateral sinuses arising from a chronic purulent otitis media and mastoiditis; second, during the course of the illness, which was most profound, the patient carried a five to seven months fetus, later giving birth to a healthy child, and third, one of the operative procedures, which was directly accountable for the patient's recovery, I believe to be the first on record. I make this last statement with some hesitancy, but I have been emboldened to do so on account of the various answers to communications I have had with several authorities, both in this country and in Europe; also because my attempts to find a similar case have been futile.

History.—Mrs. T. L., aged 18, entered Mount Zion Hospital Oct. 9, 1907. For eleven years she had had a purulent discharge from the right ear, with earache and tenderness over the mastoid at various times. Father, mother and sisters were well and she showed no evidence of previous sickness other than that from her ear. The right ear became unusually painful three days previous to her entrance, with great tenderness over the mastoid, and profuse discharge from the meatus.

Examination.—The mastoid was normal in appearance, sensitive to touch, and the auditory canal occluded with polypi. The patient was delirious, her temperature 102.4 F.; pulse 144. Blood count showed 11,300 leucocytes with 85 per cent. of polymorphonuclear leucocytes. Patient was five months pregnant and had a bloody and purulent vaginal discharge. Fundi of the eyes were normal. At ten o'clock in the evening the patient was taken to the operating room.

By this we may also account for stone-formation in the body of the gland as well as in the ductus maximus, and conclude that the concretions formed in the gland are merely incident to the disease which is destroying the parenchyma and stroma of the gland. It is well known that lime is deposited very rapidly and in great quantities on the lower incisor teeth and the buccal surface of the upper molars in some mouths. This shows that the saliva is highly charged with calcium salts in the mouths of such persons. If a foreign body enters the duct of Wharton, a nidus is afforded about which the lime will probably be deposited more or less rapidly according as the fluid contains more or less lime. There are doubtless two sources from which stones in the ducts may have their origin; that is, the deposition on foreign bodies in the duct, and depositions in the gland itself, the stones thus formed having been extruded from the gland after formation. There is one class of stone which always evidently has its origin in the gland. Reference is had to those cases in which large numbers of very small calcifications are extruded from the meatus of the duct. One such patient, a little girl ten years of age came to my clinic some years ago. The meager history obtainable indicated that the left submaxillary gland periodically enlarged and following these enlargements small concretions were passed into the mouth. When I saw the child the gland was enlarged and slightly tender to pressure. On stripping the duct toward its meatus a number of small spherical concretions of light yellow color, about the size of a mustard seed, were extruded. Subsequent history can not be given, since the patient did not again come under my observation. Some of the stones of the larger class which I have removed have been grayish in color, quite smooth and hard, the surface marked irregularly by shallow depressed lines. Such concretions remain indefinitely in the ducts without inconvenience, while those with rough surfaces irritate the ducts and in some instances cause suppuration. The latter are more friable and are liable to breakage on removal.

There can be no doubt that stones are found in other salivary ducts than Wharton's, for we have good authority that such is the case; but that stones must be rare in either Rivini's ducts or Stenson's ducts is quite evident, since they are so infrequently reported. Those found in my practice have invariably been in the duct of Wharton.

In 1892 Mikulicz first described a disease which was manifested by a symmetrical swelling of the salivary or lachrymal glands, or both. Later Kummel, Hallenhoff, Osler and others have reported cases. It is a disease of the adult and known as Mikulicz's disease. The swelling of the glands is slow; the patient, having no inconvenience, may not apply for treatment until the glands become so enlarged as to be unsightly. The salivary glands may enlarge to the size of a hen's egg or larger; the lachrymals enlarge proportionally, causing considerable bulging at the outer canthus of the eye. Function being interfered with, the mouth and conjunctiva are uncomfortably dry. The salivary glands are hard, and lobulation may easily be made out. Osler reports a case of a young negress with Mikulicz's disease in which all the salivary and both lachrymal glands and the spleen were involved. The lymphatics generally were enlarged, especially in the posterior cervical triangle; some of the mucous glands in the mouth were enlarged and the tonsils were slightly swollen.

In 1905 Max von Brunner classified the thirty cases of Mikulicz's disease which had then been reported. In ten of these cases there was symmetrical involvement of the salivary and lachrymal glands, in seven cases symmetrical swelling of the lachrymal glands alone, in four cases swelling of the salivary glands alone, in six others symmetrical swelling of the lachrymal, salivary and lymph glands. The etiology of this disease is obscure.

Neoplasms and cysts involve the parotid and occasionally the other salivary glands, but it is quite improper to attempt to discuss in a paper of this kind a subject so comprehensive.

I have seen one case of tuberculosis of the sublingual gland.

Patient.—A woman aged 35 presented herself at my clinic for treatment.

Examination.—I found on the floor of the mouth, in the position usually occupied by ranula, an enlargement elevated to the occlusal surfaces of the teeth and extending backward to the second molar and beyond the median line. Submentally there was considerable enlargement. On palpation the sensation communicated to the finger indicated more the feeling of a sebaceous cyst than a mucous cyst.

Treatment.—Before I had seen the case the swelling had been twice incised, but with no beneficial results. For the purpose of discovering the nature of the contents of the tumor, I passed a grooved explorer into the enlargement in the mouth and found no fluid but a soft, dark, grayish material of fetid odor. Microscopic examination discovered tubercle bacilli in great numbers.

Diagnosis.—Tuberculous disintegration of the sublingual gland. The remains of the gland with large quantities of the doughy dark colored disintegrated material were removed.

I have seen one case of diverticulum of Stenson's duct.

Patient.—Male aged 57 had observed for a number of years a growth which slowly increased in size at a point corresponding with the meatus of Stenson's duct.

Examination.—When I first saw it it was a pendulous pouch the size of a small cherry. When compressed between the thumb and finger it was emptied of a considerable quantity of saliva.

Treatment.—It in no way interfered with the function of the duct, but because of the inconvenience caused by its presence and its increasing size, and realizing that it might become inflamed through irritation by the teeth, I deemed it best to remove it.

Result.—At this time, four years later, it has the appearance of a perfectly normal meatus.

In conclusion I wish to give Dr. H. A. Potts credit for valuable assistance rendered in making the German translations from which I have gained much information on the subjects presented.

31 Washington St.

DISCUSSION.

Dr. Frederick B. Moorehead, Chicago: "Ranula" means the belly of a frog; anything then in the mouth that looks like the belly of a frog is ranula. From the pathologic, or even from the clinical point of view, this term is unsatisfactory. I think that Dr. Gilmer is right in saying that rarely do we find a dilatation of the duct due to salivary concretions; in fact, I have never seen one. I have seen dilatations of the glands themselves, of the infundibula of the gland—in fact a portion of the gland might become cystic or expanded—but a dilatation of the duct *per se* I have never seen. Whether it occurs or not I do not know. Etiologically there are just two classes of these cysts, those from mechanical occlusion and those from inflammatory occlusion in which there is first, infection, an interstitial inflammation, occlusion of the duct, and desquamation of the lining epithelium, and then a conglomerate mass on the inside. Strange as it may seem, those who maintain that ranula is a retention cyst of the salivary glands have yet to prove the presence of saliva in a single one of them.

Analyses of all these cysts show, not saliva, but some other substance. What are these cysts? If they are from the salivary ducts, why does the saliva entirely disappear, as shown by microscopic examination, none of the elements of normal saliva being revealed? And why do we find mucus in quantities and its elements in these cysts? Are they retention cysts, or are they true cystomata?

Dr. Vida A. Latham, Chicago: In Dr. Gilmer's experience are not these ranulæ or cystic growths more common on the left than on the right side? Can he explain it from the anatomy? I reported thirty such cases for the Massachusetts State Dental Society and I think that only two were located on the right side. I do not known why. This report was published in the *Dental Cosmos*, 1906. The pressure of badly fitting plates seems to have some injurious effect. I have had four patients with this trouble in one week, and each one was relieved as soon as I could reduce the stenosis and remove the plate. A glandular secretion, together with the mucous or salivary secretion, forms a kind of colloid secretion. It is ropy and thick and of different color; it does not look like mucus, but more like the colloid secretion in thyroid tumors. The dilatation causes stenosis through spasm of the contractile tissue of the duct, just as pressure would cause a breaking up of a fluid. It is to be hoped that dentists and medical men will cease to employ iodin and other stimulating agents in these conditions. In one of the worst cases of this kind that I ever saw the surgeon consulted wanted to incise the cyst right away as a suppurating gland. To this the patient would not consent, so the surgeon painted the cyst with iodin. At 2 o'clock in the morning I was called to see a desperate case of dyspnea from the swelling that had occurred, which was so great that the respiratory apparatus was practically shut off. Only by inserting tubes and administering oxygen could relief be obtained. Another case of sublingual cyst was treated in a similar manner; the tongue swelled and prevented proper respiration. That kind of treatment should be abolished in these cases. Dead teeth, especially the lower first molars, also cause obscure conditions. This possibility should be borne in mind in our differential diagnoses. A patient came for operation for removal of the mandible; when we explored it was agreed that the trouble was caused by dead teeth. We opened up the molar and passed a fine wire through and on into the submaxillary gland and found that this was not a case of malignant disease, but simply one of dead teeth with necrosis and a sinus. The patient promptly recovered when the pulp canals were cleared and filled.

Dr. Herbert A. Potts, Chicago: The condition which seems to me more nearly to merit the name "ranula" is a transparent, thin-walled, chronic tumor developing in the floor of the mouth, microscopic sections of which show either the whole or parts of the sublingual, not the submaxillary, gland plastered out over the walls of the cyst. The cyst walls are noninflammatory and very thin, and rich in capillary supply. It is to this that the name "ranula," if it is to be continued at all, should, I think, be applied. Bernard and Recklinghausen have been unable to produce ranula by ligation of Wharton's duct. In this connection we are reminded that ligation of the ureter does not cause a cystic kidney. The large cystic kidney is not due to the sudden shutting off of the normal secretion of the gland, but to a chronic condition. The sudden shutting off of the excretion of the gland causes its atrophy. Suzanne and Hippel have shown this in a large number of cases. It has also been demonstrated by anatomic dissection that, in the normal individual portions of the sublingual gland have been found, as stated by Dr. Gilmer, in the fibers of the mylohyoid muscle, also beyond that. It is to this fact that we may ascribe the tumors appearing under the chin rather than in the mouth until they become so large that the fibers have separated and they have been visible both inside and out. These tumors may exist for a long time unobserved. They are undoubtedly chronic. The application of iodin as well as irritations of various sorts, causes a sudden effusion into the cyst from the rich supply of capillary blood vessels around it, and a palpable tumor results. In a series of, I believe, forty cases, Kümmel was able in every case to pass a probe into a patulous Wharton's duct showing no connection whatever between that and the ranula. These tumors are easily removed. They are covered, and very loosely, by the mucous membrane of the mouth. In some cases, when the patient closes his mouth, the tumor may be seen beneath the chin; when he opens his mouth it is gone and is in the mouth. In most cases, after incision of the mucous membrane, they may be shelled out with the fingers. Of course, they may become infected, and then the proposition becomes a difficult one.

In view of the fact that these tumors seem to merit the name "ranula" more than any other, I think that if the term can not be excluded from our nomenclature it should at least be confined to these. In The Journal A. M. A., May 30, 1908, the term "acute ranula" is applied to an abscess which was opened and was healed within a few days. In regard to Mikulicz's disease, the etiology of which is rather obscure, a number of the cases which have been collected, about 30 in all, I believe, were found to be simultaneous with enlargement and involvement of the lymph glands and lymphatics. The blood findings in many of these cases are such as are observed not only in leukemia, but in pseudo-leukemia. The microscopic sections of local parts of the salivary glands show an increase in lymphoid material, and this increase is at the expense of the parenchyma of the gland. It is rather strange, too, that the submaxillary gland, in the substance of which it is doubtful if there is any lymphatic tissue, although there are a few lymph glands at the bifurcation of the artery which supplies the gland, also enlarges in this condition either on one side or both sides, usually on both. Mikulicz has described the symmetrical swelling of these glands, in which this gland is also involved.

Dr. Thomas L. Gilmer: In answer to Dr. Latham, I have found these conditions existing on the left more frequently than on the right side, but do not know the reason.

THROMBOSIS OF SUPERIOR LONGITUDINAL AND LATERAL SINUSES COMPLICATED BY PREGNANCY.

TREATED BY OPENING THE TORCULAR HEROPHILI.

LOUIS C. DEANE, M.D.
SAN FRANCISCO.

The following case is reported somewhat fully, for the following reasons: First, it is an extreme case of uncomplicated infective thrombosis of the superior longitudinal and lateral sinuses arising from a chronic purulent otitis media and mastoiditis; second, during the course of the illness, which was most profound, the patient carried a five to seven months fetus, later giving birth to a healthy child, and third, one of the operative procedures, which was directly accountable for the patient's recovery, I believe to be the first on record. I make this last statement with some hesitancy, but I have been emboldened to do so on account of the various answers to communications I have had with several authorities, both in this country and in Europe; also because my attempts to find a similar case have been futile.

History.—Mrs. T. L., aged 18, entered Mount Zion Hospital Oct. 9, 1907. For eleven years she had had a purulent discharge from the right ear, with earache and tenderness over the mastoid at various times. Father, mother and sisters were well and she showed no evidence of previous sickness other than that from her ear. The right ear became unusually painful three days previous to her entrance, with great tenderness over the mastoid, and profuse discharge from the meatus.

Examination.—The mastoid was normal in appearance, sensitive to touch, and the auditory canal occluded with polypi. The patient was delirious; her temperature 102.4 F.; pulse 144. Blood count showed 11,300 leucocytes with 85 per cent. of polymorphonuclear leucocytes. Patient was five months pregnant and had a bloody and purulent vaginal discharge. Fundi of the eyes were normal. At ten o'clock in the evening the patient was taken to the operating room.

Operation.—There was no swelling or redness over the mastoid region, neither were there any outward indications of cerebral complications or thrombosis. The auditory canal was cleared of polypi and an incision made over the mastoid. While separating the periosteum from the posterior superior wall of the osseous meatus a quantity of foul smelling pus under pressure was evacuated. This came from the mastoid cells and had opened under the periosteum of the osseous meatus; it was packed off and the mastoid cells entered directly through a hard lamella of bone, when more pus of the same nature was freed. The opening was enlarged and a quantity of granulation tissue and several small sequestra of bone were removed. The sigmoid sinus was exposed for an inch and a half past the knee into the lateral sinus. The sinus was found to contain no blood and without effort a probe was passed through an opening in its wall which was gangrenous and irregularly discolored. The opening into the antrum was next enlarged and the superior posterior wall of the osseous meatus chiseled away, much of which was found to be carious. The bone of the facial canal was unaffected. My intention was to perform a radical operation with the removal of the contents of the tympanic cavity, but after finding that the tegmina antri and tympani were intact and that the infective process had not extended in that direction I satisfied myself with a thorough curettage of the antrum and aditus, and on account of the grave condition of the patient, directed my attention to the sinus. The sinus was slit open, and some foul pus and débris liberated. A blunt curette was passed towards the bulb followed by free bleeding. The sinus was then curetted in the opposite direction for a distance of three and a quarter inches with but slight bleeding; it was then packed in both directions. The advisability of ligating the jugular at this time was considered, but on account of the free hemorrhage obtained from the inferior petrosal sinus or jugular vein and the very poor condition of the patient, it was deemed best to await further developments. Immediately following the operation the patient was exceedingly weak with temperature of 103.2 F., pulse 138 and respirations 28.

Postoperative History.—October 10. Temperature normal with pulse 108 and respirations 20. Patient vomited all fluids and heroin was given to relieve the pain which seemed to be localized in the ear.

October 11. Condition same. Temperature normal. Vomited often, complained of severe pain in head. Wound dressed with little bleeding from the sinus. Abdominal pains.

October 12. Patient more quiet. Temperature rose for a short interval from normal to 100.2 F. Pulse from 96 to 110. Respirations normal; no vomiting; eggs and broth retained. Vaginal discharge examined, and found to contain gonococci. Blood showed 15,200 leucocytes and 84 per cent. polymucleurs.

October 13. At 6 a. m. patient had a chill lasting twenty minutes, at 10 a. m. temperature was 105.4 F., pulse 160. At 12 o'clock temperature was 101.8 F. and at 2 p. m. it was normal with pulse 120 and respirations 20. Heart and lungs examined and found to be normal; fundus of eyes normal. There was no question now that the thrombosis had again become active and that infective material was being liberated into the circulation either directly by the jugular vein or through the torcular Herophili to the lateral sinus of the opposite side.

October 14. Patient was very restless, complained of pains in the back and abdomen but an examination failed to reveal an infection of any organ. At 5 p. m. she had a chill lasting half an hour and at 7 p. m. the temperature was 105.3 F., pulse 168, respiration 34. At 10 p. m. temperature was 100 F. and pulse 134.

Second Operation.—At 11 p. m. the patient was again taken to the operating room with the idea of resecting the jugular vein, but owing to the very depressed condition following her rise of temperature a hasty and simple ligation of the jugular was made at the level of the cricoid cartilage. Blood count during the day showed: Reds, 4,200,000; whites, 13,000; polymuclears 83 per cent.; large lymphocytes 2 per cent.; small lymphocytes 15 per cent.; hemoglobin 70 per cent.

October 15. Very restless and irritable, pain over the right side of head. Rectal saline infusion of 500 c.c. was used with apparent benefit. At 2 a. m. she had a chill followed by a temperature of 104.8 F., returning to normal at 6 a. m.

October 16. Patient very depressed; could not retain nourishment. At 4 p. m. she lapsed into a state of complete collapse, respirations and pulse apparently ceasing. She was revived by a high rectal saline infusion and hypodermics of nitroglycerin, strychnin and brandy, with a return to consciousness in about 20 minutes. Temperature did not rise over 100.8 F. during the day and was subnormal most of the time—97.2 F. White blood cells 15,200, polynuclears 82 per cent.

October 17. Nutrient enema of whiskey, peptonized milk and egg. Could not retain food on the stomach. At 12 m. she had a chill; highest temperature 105.6 F., pulse 168. Saline rectal infusion followed by marked improvement, and later enema of coffee and whiskey. At 11 p. m. patient had so improved that it was decided to resect the jugular above and below the previous point of ligation.

Third Operation.—The vein was ligated well above the entrance to the facial vein and resected to within one inch above the clavicle. A small clot was dislodged from the upper part of the jugular after removing the ligature, but there was no evidence of the infective process having extended down to the point of ligation; this was confirmed later for the wound healed within a few days with the aid of small cigarette drain.

Postoperative History.—October 18. At 6 a. m. patient had a severe chill lasting 39 minutes. Saline infusion of 250 c.c. was given and later an enema of coffee and whiskey, all were retained. She became delirious, the temperature rising to 104.4 F. and pulse 162, descending to 97 F. with pulse 104.

October 19. Patient irritable and restless, heroin given. She retained on stomach peptonized milk and whiskey which was used as freely as possible. At 1 a. m. she had a chill lasting 50 minutes, temperature rising to 105.6 F., pulse 193, respiration 28. After each rise of temperature it always descended in from two to six hours to normal or subnormal, the pulse remaining comparatively high.

October 20. Patient retained some nourishment by stomach. The lungs, heart, kidneys, liver, urine, etc., were found to be normal and fetus alive though she complained of abdominal pains. She had a chill at 4 p. m., temperature 106.4 F., pulse 166. At 10 p. m. temperature was normal.

October 21. Patient was delirious, restless and vomited continually. At 10 a. m. the temperature was 106.4 F., which descended slowly, reaching normal at 6 p. m. A bacteriologic examination was made. The arm over the median cephalic vein was thoroughly sterilized and the vein exposed, from which blood uncontaminated from external sources, was extracted. After incubation it was shown to contain a pure culture of *Staphylococcus pyogenes aureus*. From the above culture a vaccine was made according to Wright's method, for the purpose of combating her general septic condition. It was never used on account of subsequent developments.

October 22. Patient vomited continuously, was delirious much of the time and general condition very poor. At 12 m. after a chill her temperature rose to 106.2 F., pulse 180, and respiration 36. The wound was dressed each day and the sinus irrigated and packed. The foul odor so noticeable at first had decreased; the probe and the blunt curette were used in the lateral sinus posteriorly as far as the torcular without showing a trace of blood. There was no bleeding noticeable from the direction of the bulb where the inferior petrosal sinus empties.

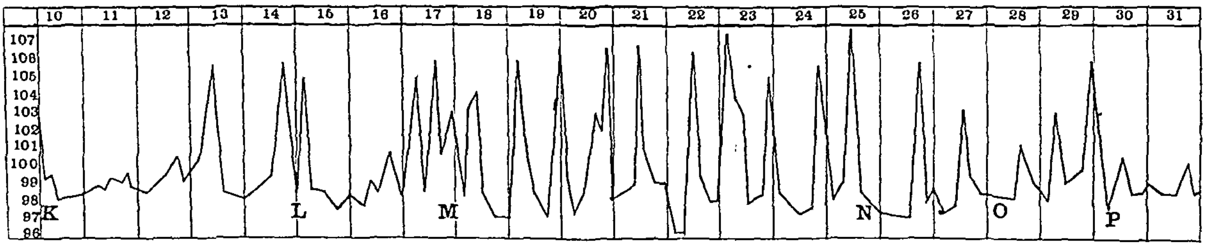
October 23. Patient had a chill, the temperature rising to 107.2 F., pulse 190, respiration 38. Later the temperature was 97.4 F., and pulse 104. Fetus was alive.

October 24. Patient very weak, vomited all food. Chill, temperature to 105.4 F., down to 97.2 F.

October 25. At 10 a. m. the patient's temperature rose to 107.4, pulse about 200. Lowest temperature 97.2 and pulse 98. At 3.20 p. m. the patient was removed to the operating room with the intention of opening the torcular Herophili through the occipital protuberance.

The question of meningitis, epidural abscess, cerebral and cerebellar abscess was considered. The temperature course would almost exclude a meningitis. The complete absence of pressure symptoms, such as headache, reduced pulse rate and changes in the optic nerve, with the great variation of temperature and the fact that by further exploration, the walls of the antrum, aditus, and tympanic cavities were found to be intact, seemed to exclude cerebral and epidural abscess. There were two questions remaining, a possible cerebellar abscess, which frequently exists with masked symptoms, and a simple infective sinus thrombosis. The close proximity of the cerebellum to a gangrenous and infected sinus, rendered likely an abscess of this part. One thing was certain, that the real source of infection and the chief cause of the symptoms was the dislodgement into the circulation of infective material containing staphylococci, and coming from one of the venous sinuses of the brain. The lateral sinus could be probed from the mastoid to the torcular and seemed to be free of infective material as well as blood. I was compelled to conclude that either the straight, the superior longitudinal, or the lateral sinus of the opposite side was affected. The possibility of the thrombus extending along the superior and inferior petrosal sinuses from the sigmoid to the cavernous sinus was considered, but the absence of all eye symptoms directed my attention again to the sinuses in the posterior region of the cranium. An infection through the posterior condyloid and mastoid emissary veins which communicated with the subclavian and innominate veins, seemed hardly possible.

Fourth Operation.—Never having heard of the torcular Herophili being operated on, and knowing the great danger of opening this confluence of all the sinuses, thereby shutting off the venous circulation of the brain, I went with some trepidation to the task, realizing that my patient would die at any moment as she was rapidly growing weaker, and the temperature variations were becoming more marked. The superior longitudinal sinus as a rule empties more directly into the right lateral sinus, while the straight sinus empties even more directly into the left lateral sinus. As the right side of the torcular, where the lateral sinus starts, was apparently occluded, I determined to trephine directly over this region and endeavor to enter the superior longitudinal sinus through the torcular Herophili. As a preliminary procedure the cerebellum was opened at a point one and one-half inches posterior to the auditory meatus and one-half an inch below, the dura incised and a bistoury passed into the cerebellar substance in various directions without revealing any pus. I then selected a point one-half an inch to the right, and slightly below the occipital protuberance for the purpose of entering the torcular Herophili. A chisel and gouge were used to thin the bone, preparatory to the trephine. The cranium in this region is very thick, cancellous and filled with blood vessels that bleed freely; the latter were controlled by the use of sterilized paraffin. Rongeur forceps were quite inadequate in this region, but several adjacent trephines aided by the gouge and mallet gave an opening sufficiently large to work on the torcular Herophili with its several confluent sinuses. One must be in a position to check bleeding from one or more sources and still be able to continue the operation. A circular opening at least two inches in diameter, with its precipitous edges well chiseled away, seemed sufficient. A larger area was impracticable owing to the great thickness of the cranium in this region, and the hemorrhage from the bone in enlarging it. The lateral sinus was readily distinguished at its exit from the torcular, and also by the fact that at this point it was collapsed and discolored. An incision was made in it, extending into the torcular followed by only a slight oozing of blood. A curette was inserted a distance of four inches into the superior longitudinal sinus with no signs of blood, but a quantity of dark and foul smelling material was removed. The probe was then passed toward the left lateral sinus and some bleeding occurred. This encouraged me to use the curette, which was followed by a gush of venous blood that was checked by compression. A strip of gauze was inserted into the superior longitudinal sinus for a distance of two inches, and a piece of gauze was carried along the lateral sinus to its opening in the mastoid. The wound was dressed and patient returned to bed.



Temperature chart of Mrs. T. L.; a case of thrombosis of the superior longitudinal and lateral sinuses. Treated by opening the torcular Herophili. Complicated by pregnancy. Recovery. K, operation on mastoid and lateral sinus; L, ligation of jugular vein; M, resection of jugular; N, opening of torcular Herophili through occipital protuberance. O, extracted 12 oz. blood from left lateral sinus; P, extracted 8 oz. blood from left lateral sinus.

Postoperative History.—October 26: Patient was in fair condition: restless; vomited frequently. At 5:30 p. m., twenty-five hours after the operation, she had a chill lasting half an hour. At 6:30 p. m., the temperature was 105.8 F., pulse 175. Temperature descended to 97.4 F. in a few hours. A nutrient enema of whiskey one ounce, digitalis 20 minims and milk 4 ounces was given and retained.

October 27: Patient same as day before, vomiting, etc.; nutrient enemas with whiskey in large doses were given; highest temperature 103.2 F. A quantity of dark and purulent detritus with foul odor removed from the longitudinal sinus.

October 28: Ice cap was applied. Patient vomited, but retained some peptonized milk and whiskey. During the dressing, pressure was removed from the left side of the torcular and a blunt curette gently passed into the left lateral sinus; twelve ounces of blood was extracted, which came in a gush. My idea was to carry outward, if possible, any thrombotic material which might be lodged in the straight, the occipital or the left lateral sinus. The temperature that day did not rise above 101.6 F.

October 29: Patient vomited to some extent, but was not so restless; very irritable temper. Nutrient enemas and temperature again to 105.6 F.; pulse 140.

October 30: I decided to repeat the same procedure of two days before, and removed 8 ounces of blood. This was followed by a rise of temperature to 100.5 F.

October 31: Patient ate and retained eggs, fish, toast and coffee. Temperature rising for a short time to 100.4 F., with pulse 140. The latter remained high regardless of the temperature.

November 1: Highest temperature 99.2 F.; pulse 138. The temperature after this date never rose above normal, thoug on November 4 it descended to 96.2 F., with some depression

This case was an uncomplicated thrombosis involvin the entire right lateral sinus, and superior longitudina sinus, with unquestionably the inferior petrosal, straigh and occipital sinuses and torcular Herophili involved in the same process.

Over fourteen inches of venous blood current were obliterated, including the right jugular vein, sigmoid, lateral and superior longitudinal sinuses. After occlusion of the right lateral and superior longitudinal sinuses, blood was freely extracted from the left lateral, straight and occipital sinuses through the torcular Herophili which procedure marked the termination of her general sepsis.

On January 31, four months after the illness, the patient gave birth to a remarkably fine child weighing seven and one-half pounds. On March 15 the wound had entirely cicatrized over the posterior part of the cranium. A small fistulous opening remained in the mastoid which communicated directly with the tympanic cavity.

The radical operation which had previously been so rudely interrupted was now completed. The malleus and incus were removed, also the outer attic wall and the Eustachian tube obliterated. The area over the region of the sigmoid and lateral sinuses was covered by a dense mass of fibrous tissue which was left intact. The mastoid wound was entirely closed and healed by first intention. Two months later the tympanic cavity and antrum are well lined with skin and the patient discharged. Hearing in that ear is the watch at 16 cm. (6½ in.).

THE FACTORS IN THE ESTIMATION OF BLOOD PRESSURE.*

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The first factor in the interpretation of blood pressure must be a satisfactory instrument. It should, to be of service for general work, be portable, quick of adjustment and accurate. These qualities are possessed in eminent degree by the tonometer of Recklinghausen. It does not detract from the achievement of Riva-Rocci that later modifications have improved the technic; his merit will always lie in the impetus given to the study of blood pressure as a routine feature of the general examination; the aim now must be to analyze the findings properly.

The tonometer of Recklinghausen is based on the principle, first introduced into physical science by Bourdon and later incorporated into the kymograph of Fick, that if a very shallow, curved, elongated air chamber, fixed at one end, communicate at one end of the arc with a pressure apparatus, while the other is closed, any increase of pressure will be made manifest by a flattening or elongation of the arc, thereby imparting a certain movement to the end that is free. By a very simple device this movement of the air chamber is communicated to an axis, on which, guarded by a hair-spring, there is fastened a long needle, whose tip is made to move along a graduated scale, previously standardized, and the final figures are read off from the dial.

A notable advantage in the Recklinghausen apparatus is found in the pump. A metallic air-pump, constructed somewhat on the principle of the bicycle pump, is substituted for the ordinary double rubber bulb. The pump permits of increase or decrease of pressure at the will of the examiner; the instrument is at all times under perfect control; measurements can be made with greatest accuracy and promptly verified. By an ingenious arrangement of valves, easily controlled, this increase or diminution of pressure can be made to take place slowly. The whole apparatus is manipulated, without any force, by one hand, while the other is free to take the pulse. The pump is light, durable and only requires an occasional application of vaselin to valves and piston head.

The cuff is very broad, has a relatively small elastic chamber and a very strong band of thick canvas. It is applied by a buckle and strap, so that it can be snugly fitted to the arm. It is 12 cm. wide. The distention of the rubber pocket can never be very great, though the pressure run to considerable figures. The whole apparatus has, when packed, a weight of four and one-half pounds, and can be easily carried to the bedside of the patient.

The distinct advantage of the Recklinghausen apparatus is in its ability to measure both systolic and diastolic pressures. It will be seen that the mere determination of systolic pressure, though a step in advance, offers little help in the solution of clinical problems; the important thing is the relation of systolic and diastolic pressure. Aside from the actual pressure, measurable directly in centimeters of water, the tonometer makes it possible to observe the rhythm in time and power of the heart's contractions. It will frequently happen that the pulse seems perfectly regular at the wrist, when the ocular evidences of the slightly unequal movements of the needle will show the contrary; the pulse may seem to show an equal filling of the artery at each contraction, but the dial will record differences in this regard. Again, in many organic affections of the heart, a peculiar vibratile oscillation of the needle accompanies the *excursions* of the pulse, instead of the gradual rise and undulating decline, so that the tonometer offers all the advantages of a sphygmographic tracing, along with the information as to blood pressure.

Care must be taken that the examinations are not too long continued, for the interruption of the circulation in an extremity, if prolonged, will of itself cause changes in the blood pressure.

I start with this postulate: The arterial system has a capacity such that, if all arteries were perfectly limp and dilated, it could never be filled by the available amount of blood. The conditions necessary for a proper circulation are only secured by a certain permanent state of contraction common to all, or nearly all, of the arteries; a state of contraction still further increased with the functional inactivity of the parts supplied, and diminished, but never wholly relinquished, with the proper exercise of function. This brings the general conception of the circulation directly into line with what is known of the safeguarding devices with respect to the heart proper, and, as Gad has shown, with respect to the respiration, in which a state of partial but permanent inhibition always supplies a natural reserve to meet emergencies of all kinds.

This view is directly at variance with older physiologic doctrine. Thus Landois says:

> The system of blood vessels, with its many ramifications and subdivisions endowed everywhere with contractility and elasticity, is not only filled with blood; it is overfilled. Hence the mass of blood produces a certain pressure, which produces a *stretching* of the elastic vessel wall. This, of course, applies only to conditions during life; after death the muscular tissue of the vessel walls becomes relaxed and some fluid finds its way out *into the tissue*.

In the same way the doctrine that frequency of pulse-beat *increases* the blood pressure will doubtless receive revision. Foster says:

> If, while the force of the individual beats remains constant the *frequency* is increased or diminished, and, vice versa, if

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

while the frequency remains the same the force is increased or diminished, the pressure is proportionately increased or diminished. This clearly must be the case, but obviously it is possible that the beats might, while more frequent, so lose in force, or while less frequent so increase in force that no difference in the mean pressure should result. And this, indeed, is not infrequently the case. So much so, that variations in the heart beat must always be looked on as a far less important factor of blood pressure than the peripheral resistance.

Clinical experience seems to demonstrate that actually the pressure is not influenced by the pulse-rate in the way that might be imagined. Weigert,[1] in a study of 241 cases of acute infectious diseases, found that the lowest pressures in many of these were observed not during the height of the fever, but in the first few days of returning normal temperature; at a period when the pulse was much slower than it had been; when the individual complained of a peculiar gone or good-for-nothing feeling, and when there was always some danger from any peculiar sudden effort. At this period there frequently is an abnormally slow pulse, coupled with this minimum pressure.

Conversely, I have recently had the opportunity of observing a case of paroxysmal tachycardia in a young man of 18, exceptionally tall and fairly well developed, whose heart, on January 14, when he presented himself, beat so fast and irregularly that the pulse could not be counted. The blood pressure in cm. of water, measured by the tonometer, was 122, diastolic 100. The patient was put to bed on light diet and took triple bromids with mild laxatives for two days, when the blood pressure was 128, diastolic 100, the pulse-rate being 72; January 24, the patient being now up and about and again attending a technical school, the pulse-rate was 84, the blood pressure was 134, the diastolic 96; April 25, the pulse-rate was 102, the pressure 132, the diastolic 104. The pressure was practically the same at every stage, regardless of pulse frequency.

There is as yet no normal standard of blood pressure, and it is difficult to see how any uniform basis for comparison shall be found. Different observers have employed different instruments; from this fact alone there would naturally arise some discrepancy; but even with the same instrument the figures have not been even approximately uniform. Tables hitherto given have been based on observations of maximum or systolic pressure only, because it was impossible to get the diastolic pressure with the method employed. The Erlanger instrument is suitable only for hospital or office use; the tonometer of Recklinghausen is the only instrument thus far devised that conveniently gives us both of the data with certainty and promptness.

The accompanying table gives the figures as stated by different observers:

Landois, for larger mammalia and probably for man, 140-160 mm.
Faivre, direct measurement, 110-160 mm.
Albert, direct measurement, 100-160 mm.
Kuhe-Wiegandt, in uremic patient, 150 mm., direct measurement.
Basch, in temporals, 90-120 mm.; in radials, 110-160 mm.
Federn, 80-90 mm.
Bruce, 100-130 mm.
Tschlenoff, in radial, 70-100 mm.; in tibial, 60-70 mm.
Huerthle, 100 mm.
Frey, in digital arteries, 100-110; in radials, 150-160 mm.
Eckert, in temporal, 175 mm.
Hensen, in 25 healthy men, aged 17-30, 137 mm.; in 30 women, aged 17-30, 132 mm.; normal range, 100-160 mm.
Gumprecht, in men, 140 mm.; in women, 120 mm.
Weiss, in men, 120 mm.; in women, 100 mm.
Schüle, 80-130 mm.
Neisser, 90-100 possible 160 mm.
Jellinek, in 500 soldiers, 100-160 mm., may be 180 mm
Neu, 80-130 mm. (regards 130 as abnormal, most frequent 95-115 mm.).
Erlanger, systolic, 110 mm.; diastolic, 65 mm.
Graupner, 115-125 mm.
Sawada, 90-120 mm.
Schilling, 90-120 mm.
Janeway, 110-125 mm.
Sahli-Gassel, 135 mm., high limit of health.
Eichberg, in members of class in medical school, systolic, 86-120 mm.—diastolic, 56-88 mm.

No single reading should be considered a basis of final judgment. It is necessary to see the patient a number of times and to make the observations under diverse conditions, if possible, before estimating the blood pressure as an element of diagnosis. Error has arisen from neglect of this injunction, which has been especially insisted on by Sahli, Krehl and others.

To obtain a fair idea of the blood pressure normal to the individual, observations should be made with the patient fasting and again just after a meal; with the patient reclining and seated or standing; with the patient at rest and after a sudden muscular effort. This will give data for estimation of the actual work of the heart, and also an idea of its recuperative power, a feature of more significance in an estimate of the condition of the circulation than the mere value in figures. It may be assumed that, while an approximate standard exists, taken as an average of many observations as to what should constitute the normal pressure, this varies with each individual, and that it does so with the same individual at different times. The term "amplitude" is suggested by Klemperer for the difference between the systolic and diastolic pressure. Variations in amplitude in the same individual constitute a most important part of the study.

The amplitude increases for organic disease of the kidney, arteriosclerosis and aortic insufficiency. It diminishes for other organic diseases of the heart, affecting the valves or myocardium. It is interesting to note that in a healthy circulation the amplitude increases with moderate exercise, while every deficiency of the circulation manifests itself by a reduction of the amplitude, even when the systolic pressure is increased; this fact enables us to differentiate certain of the nervous disturbances of the heart from those due to organic mischief. In the case of the athlete with damaged heart, the initial amplitude was 114 c.c. in the recumbent position; in the sitting position, 108; after walking upstairs, 94; ten minutes later, 68. In one healthy young man the initial amplitude was 32; after walking, 48; in another test, initial amplitude was 36, after climbing stairs 46; on another occasion 30, after effort 48. According to Gerhardt, the systolic pressure in broken compensation is high, but the amplitude becomes small as the heart grows weak and again becomes greater as more powerful contractions are resumed.

The effect of exercise on the blood tension is a matter of daily personal experience. Any unusual effort makes us conscious of the beating of the heart. This implies an increase of work on the part of the heart, and an increase of arterial tension. The increase of tension is not directly proportioned to the work performed. Thus Masing[2] has shown that the labor of lifting 10 kg. produces a rise disproportionately greater than the labor of lifting 5 kg.

The fact that such an increase occurs makes it necessary to consider the previous conditions of the patient at the time of the observation. But the very fact of such increase as a normal reaction furnishes an important diagnostic aid. The healthy individual, after measured exercise, will present the increase of pressure.

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[1] Samml. klin. Vortr. (Volkmann's), No. 459

[2] [illegible] Arch. f. klin. Med., November, [illegible]

usually with increase of pulse-rate, the increase being more marked in the systolic than the diastolic pressure; but soon after the completion of the work, if not too greatly prolonged or too severe, the tension returns to the normal. For example, in a healthy young man, with an initial systolic blood pressure of 140 c.c., the pressure rose after walking up two flights of stairs to 170 c.c., but within five minutes was back again to 140 c.c. A striking contrast to this was offered in the case of a former circus athlete, now aged 53, who had a marked mitral insufficiency with arrhythmia and arteriosclerosis and a pulse of 96. The initial pressures here were, with the patient lying down, systolic 236 c.c., diastolic 122 c.c.; with the patient sitting, 240-132; after walking up two flights of stairs, 216-122; ten minutes later, 190-122. Here the tension was not only lower immediately after the exercise than before, having fallen from 240 c.c. to 216 c.c., but it continued to decline when the patient was again at rest, and after fifteen minutes was still 50 c.c. lower than at first. A reaction of this kind always indicates a damaged myocardium.

Even in the presence of recognizable valvular lesion, the effect of such a test will, if the heart muscle be competent, give instant information. A man, aged 34, with an old mitral insufficiency, gave, while resting, systolic 168, diastolic 122; after exercise, systolic 188, diastolic 122; after five minutes, systolic 166; next day, while resting, systolic 158, diastolic 122, thus showing adequate compensation.

It is possible by practice gradually to increase the amount of work that can be performed, while still permitting the prompt return of the circulation to the state of normal tension, and this constitutes a proper system of training, as that term is generally understood. The injurious effects of training will inevitably appear sooner or later if such training carries the work beyond the point where a quick return to the normal tension is possible. The true limit of the training capacity of the individual is thus to be found in the interrogation of the arterial tension. Naturally the work that can be imposed on a damaged circulation and yet remain within its training capacity will always be less than that imposed upon a normal individual; in the selection of the test to be employed care and discrimination must always be exercised. Cases of advanced organic disease, of aneurism, of convalescence from exhausting acute disease, may be altogether unsuitable for its performance.

When the effort is prolonged but moderate, the pressure rises, but soon adjusts itself to a mean higher level, in which any slight additional effort produces no effect. Thus in the case of the young man just mentioned with a normal pressure of 140 c.c. the systolic pressure after walking one mile was 154 to 112 diastolic. Walking up two flights of stairs then made no difference, the pressure remaining at 154-112.

The quantity and viscosity of the blood necessarily influence the blood pressure. Moderate blood-letting up to 2.8 per cent. of body weight is not attended by any noteworthy decline of pressure. Blood-letting up to 4 or 6 per cent. of the body weight reduces the blood pressure to zero. The blood pressure is increased by any addition to the volume of the circulating fluid, as by injection of defibrinated blood, or normal salt solution, either directly into the veins or into the subcutaneous tissue, respectively. After copious meals there is also an increase of blood pressure, attributable in part to addition to the volume of circulating fluid. There is as yet no satisfactory means of determining the viscosity of the blood. Boveri[3] found that hypertension from adrenalin or tobacco was always accompanied by a notable increase of erythrocytes. Paul Arnold[4] also notes that chronic increase of the blood pressure, as a rule, leads to increase of red corpuscles and hemoglobin. Boveri remarked on the distinct parallelism between the viscosity of the blood and the number of erythrocytes, so that a polycythemia would usually indicate an increased viscosity.

The most important factor in the control of blood pressure is the nervous system. It had been known that almost every phenomenon connected with life, whether it be a physical or mental phenomenon, produced, temporarily at least, a modification of pressure over a larger or small portion of the vascular area. Taking the physiology of the nervous control for granted, it is of interest to note that recent experiments have added much interesting light. Curschmann[5] finds that the effect of painful faradic currents applied in such a way as to avoid motor points of irritation, in normal individuals, is generally to increase the blood pressure; in persons with organic or functional hypertension the increase is disproportionately greater. In organic analgesia the experiment produces no modification of pressure, nor is there any change in hysterical analgesia until the hysteria is relieved—thus seemingly proving that there is an actual sensory lesion in hysteria. Klemperer,[6] while admitting the influence of physical work in increasing the blood pressure, says that the amount of this increase is largely determined by psychic factors. Masing[7] determined that the increase of blood pressure with any given effort was less according as there was less determined effort of the will. Kiessling[8] shows that efforts which are unusual, requiring more mental concentration, are accompanied by a greater rise of blood pressure. Direct stimulation of the cortex in curarized animals is attended by a signal rise of blood pressure.[9] In man an analogous result follows hypnotic suggestion (Klemperer[6]). Here, with the muscles perfectly limp, the suggestion of work, such as mounting stairs or drawing a tight cork from a bottle, raised the pressure from 178 c.c. to 206 c.c. It then dropped to 176, and with a further suggestion rose to 210 c.c. The mere intention of doing work, the willing to do it, increased the pressure.

Passive movements, except those causing pressure on the thorax or abdomen, may be performed for a long time without increase of pressure. Klemperer says that the least factor in the increase of pressure attending any given work is due to the necessary muscular activity; the participation of the cerebral cortex is the principal cause. This fact may well explain the advantage of passive movements in cases of heart lesion, either alone or, as at Nauheim, if coupled with effervescing baths, and gradually changed into resistance movements.

Dyspnea increases the blood pressure very materially.[10] This applies not only to acute suffocative conditions but to dyspnea of long standing. The amount of this increase varies greatly in different individuals, depending on the degree of the dyspnea and the power and adaptability of the heart. The walls of the vessels contract when the blood becomes distinctly venous in type. It is the increasing venosity of the blood, according to Landois, which causes the emptying of the arteries after death. The vasomotor center in the medulla is the direct agency in this phenomenon, the ganglionic cells being exceedingly sensitive to changes in the composition of the circulating fluid.

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[3] Clin. med. ital., September, 1906.

[4] Dissertation, Würzburg, 1907.

[5] Berl. klin. Wchnschr., 1907, p. 132.

[6] Ber. ü. d. Verhandl. d. Kong. f. innere Med., 1907.

[7] Deutsch. Arch. f. klin. Med., 1902, lxxiv, 253.

[8] Dissertation, Greifswald.

[9] Weber: Arch. f. Anat. u. Physiol., supplement, 1906, p. 309.

[10] Jaeger, O.: Dissertation, Leipsic, 1906.

Contrary to what might be expected, acute infectious diseases have but little influence on the blood pressure. If we stop to reflect, the fact need cause no surprise, since the compensating mechanisms of the body are so abundantly provided that an acute condition, though it strain the limit of reserve, does not utterly exhaust it. Gerhardt[11] shows that in febrile diseases, as the heart grows weak, the arteries contract (probably under vasomotor influence), thus preserving the pressure. A very exhaustive study has lately been made by Weigert[1] of Dresden. In many of the acute infections the pressure fell during the height of the fever and returned to the normal as convalescence was established. There was no proportionate decline in pressure with increasing gravity of the symptoms. The report is based on a study of 241 cases, and the pressures recorded are all systolic. In typhoid fever there was a decline at the height of the fever. In pneumonia no change was noted at any stage, not even in the crisis. In scarlet fever without complication there was no change; the same was true of diphtheria without complications. The observations of the blood pressure furnished no certain prognostic indications nor suggestions for treatment. How little could be learned from the blood pressure with regard to the gravity of the case was shown in a case of ulcerative endocarditis, with general bacteriemia, in which six days before death the pressure was 140 mm.; three days later it was 95 mm.; then, despite increasing frequency of the pulse, it rose to 115 mm., and shortly before death attained 125 mm. In another case of ulcerative endocarditis with streptococci in the blood the pressure on the second day was 136 mm.; the next day it was 122; then it rose to 155 mm. on the tenth day, and on the eleventh, the day of the patient's death, it was 145.

However, Cook and Briggs[12] found in typhoid cases a hypertension increasing with complications, parallel to the severity of the disease and to deepening intoxication. The occurrence of perforation, confirmed by operation, was indicated by a sudden jump in pressure before the appearance of any other symptom, the pressure rising from 106 to 144: while in another case with seeming certainty of perforation, as shown by leucocytosis, rapid pulse and sharp abdominal pain, without rise of blood pressure, the operation failed to show any sign of perforation. Similarly, Teissier and others have found in the sudden increase of pressure a precursor of hemorrhage. Crile, too, found this increase of blood pressure in cases of perforation confirmed in four cases by operation or autopsy. In making this observation frequent tests will be indispensable, and only very marked, sudden fluctuations can be of value.

The acute condition may pass without notable change in blood pressure, but the subsequent history of these cases, as recently studied by Thayer in typhoid, shows that after the lapse of several years the damage done may become manifest. Thayer's patients all showed an increase of blood pressure as compared with other individuals of the same age. Many had developed arteriosclerosis. The greatest rise was observed in the later decades.

Determination of a high or low pressure is in itself of no value. The lowest values compatible with life are found by Neu[13] to be from 40 to 45 mm., and these occur only with subnormal temperature in the moribund state, though Neu[13] has seen patients recover after the pressure had fallen as low as 50 mm. The greatest variation that has come under my personal observation was noted in the case of a shoemaker, aged 64, with arteriosclerosis, a man of temperate habits, with no recognizable lesion except a slight bronchitis, where the amplitude was 212 c.c., the systolic pressure being 394, the diastolic 182 c.c.

It is in chronic conditions that the study of blood pressure is of the greatest advantage for diagnostic and therapeutic purposes. Friedrich Müller states that the constant increase of blood pressure is the earliest symptom of a developing arteriosclerosis, and Groedel[14] maintains that the constant increase of blood pressure, in the absence of aortic insufficiency and of interstitial nephritis, is in itself sufficient to establish a diagnosis of arteriosclerosis. Hypertension does not necessarily exist in every case of arteriosclerosis; on the contrary, normal pressure may be present in advanced cases, but where the increased pressure is found the presence of arterial changes is indicated.

Hypertension, however, is not in itself a disease. Graupner[15] says that it is an accompanying or resulting symptom of many anomalies of nutrition — diabetes, gout, syphilis, chronic lead poisoning and certain kidney affections, all of which lead to changes in the splanchnic distribution. Changes may be present in the aorta, in the cerebral or brachial arteries, without any change in tension. Romberg and Hasenfeld have shown that hypertension occurs only when the arteries of the splanchnic territory are extensively involved. Sclerosis of the arteries is a very slowly progressive change. Its nature has been most exhaustively studied by Jores.[16] The association with nephritis has long been recognized. Groedel found in seventy-one cases of nephritis a minimum pressure of 130 mm., and more than half had a pressure of 170 mm. or more.

The general assumption has been that hypertension is in itself very dangerous, inasmuch as it leads to alteration of the vessel wall, possibly to rupture, or induces cardiac hypertrophy and subsequent dilatation, so that in every case baths, iodin compounds and nitrites should be used. This view is strongly combated by Krehl[17] and by Bier. They regard the high pressure as compensatory. In chronic kidney disease the high pressure causes a more rapid flow through the reduced vascular area in the kidney, and this more rapid flow allows of necessary elimination. In many cases, with a more effective action of the kidney, the pressure promptly declines. Krehl cautions against unnecessary interference with this beneficial automatic arrangement for maintaining the competency of the kidney, except in so far as regulation of the diet may reduce the proportion of waste products to a minimum, for reduction of blood pressure will retard the elimination from the kidney and increase the patient's danger. In six cases of chronic kidney disease with hypertension reported by Graupner the blood pressure fell as soon as the function of the kidney improved: the compensatory increase of tension was no longer necessary. Similarly Krehl regards the hypertension in arteriosclerosis as part of the natural regulation with which we should not interfere. On this point, however, issue may be taken, provided a healthy heart muscle exists. If the heart be insufficient, or if its power of adaptability be greatly reduced, then it is probable that the hypertension assists the circulation. But with a normal heart the increase of tension in arteriosclerosis is due to mechanical conditions, thickening of vessel walls, reduction of caliber, loss of elasticity—all purely mechanical obstacles, whose effects can be modified by treatment.

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[11] Samml. klin. Vortr. (Volkmann's), No. 470.

[12] Johns Hopkins Hosp. Rep., xi.

[13] Experimentelle und klinische Blutdruck-Untersuchungen, Heidelberg, 1902.

[14] Ber. ü. d. Verhandl. d. xxi. Kong. f. Innere Med.

[15] Berl. klin. Wchnschr., 1907, No. 15.

[16] Wesen und Entwickelung der Arteriosklerose, Wiesbaden, 1903, Bergmann.

[17] Deutsch. med. Wchnschr., 1905, No. 7.

The indication of the necessity for treatment, for attempting to reduce the hypertension, is to be found in the response of the heart to blood-pressure tests after a measured amount of work. If the heart muscle still has a certain training capacity, then it does not require the compensatory hypertension. The question is always one of adaptability of the heart.

Many agencies reduce the blood tension. Warm, effervescent baths, as used in the natural state at Nauheim, are of most signal value and thousands are benefited annually; under their influence, if judiciously employed, the blood pressure increases to a physiologic maximum and then falls, while the functional capacity of the heart increases by combining the baths with exercise. The effect of iodin in arteriosclerosis is perhaps to be explained by the control which it exercises over the polycythemia, and by its reduction of the viscosity of the blood, rather than to any influence on the anatomic change. The effect of the nitrites is universally acknowledged.

It is in the direction of prevention, however, that we should most earnestly apply our efforts. With our knowledge of the influence of the nervous activity in the causation of the hypertension, with the recognized rôle of excessive waste products in the blood in the same direction, the treatment to be instituted lies more in educating the patient to right living than in the administration of medicine. Avoidance of alcohol and tobacco, moderation in eating and drinking, proper hours of rest, and the elimination of excitement and nerve strain become the principal therapeutic measures. To cultivate repose is thus not only an obligation imposed by good breeding; it is an imperative law of physical health. The study of the blood pressure furnishes the guide as to the efficacy of the treatment, as well as to the time for its continuance. Assuredly it is not possible to agree with Romberg in this statement: "With regard to the measurement of blood pressure we thus have much more accurate information than formerly regarding one of the conditions under which the circulation is carried on. But even as no conclusions as to the efficacy of the circulation can be drawn from the height of the blood pressure, no clue as to the details of the mechanism is found in the composition of the blood pressure and its comparison with the maximum of pressure.

These factors give no measure of the relative participation of heart and blood vessels in the existing changes of the circulation, because the extent of the pulsatile oscillation is influenced not only by the heart but by the tension and elasticity of the vessels, and the tension of the vessels is by no means in a fixed ratio to the maximum of pressure."

The following conclusions seem justified:

1. The routine interrogation of the blood pressure should constitute part of the regular examination of each case.
2. Both systolic and diastolic pressures are necessary in the solution of the problem.
3. Systolic values of more than 130 mm. call for further study.
4. The most important feature of the study of blood pressure is found in its behavior under tests with measured amount of work.
5. Increase of blood pressure is often conservative, and then calls for no interference.
6. A pressure that is at all times above normal may be the only, as it often is the earliest, evidence of arteriosclerosis.

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DISCUSSION.

Dr. W. F. Dutton, Pittsburg: The etiology of hypertonic contraction readily resolves itself into two great divisions, the influence of the nervous system and the composition of the blood. I am not referring to the mechanical conception which would make the arteries mere elastic tubes but to that of living tissue. I have been experimenting with methylene blue. When administered in large doses a retention of the drug in the tissues takes place, owing to a disturbance of renal function, and manifests itself by a diminished excretion of the drug in the urine and feces. After a saturation of the tissues every additional dose is followed by a lessened functional activity. This effect is most apparent in the arteries, and it causes at once a hypertonic contraction and hyperemia of the renal capillaries as well as other pathologic conditions. This method is one to determine the condition of the arteries. The tightening or relaxation of the radial arteries is of clinical importance. The conception is false that the blood-pressure is heightened inside all hypertonically contracted blood vessels only. The two factors of the vessel wall and of the contained blood must be separated. There should be an estimation of the pressure inside of the artery, no matter what the thickness of the walls may be. Nervous reflex, however, may be due to blood impurity.

I do not believe that von Recklinghausen's instrument differs greatly from others. The only thing that can be depended on in its use is the estimation of the resistance of the blood. None of these instruments is perfect. The one, however, that I believe to be the most convenient for the general practitioner's use is that of Riva-Rocci as modified by Cook. The hypertonic, or the sclerotic or atheromatous condition of the arteries is determined by the sense of touch. I believe that the more the general practitioner practices this determination of the arterial condition by the sense of touch, the more perfect he will become—and more so than by the use of these complicated instruments. Arterial sclerosis and atheroma are totally different. Continued stimulation of the arterial wall leads to structural changes, and the fact that a fibrous hyperplasia of the tunica intima takes place shows that the vessel changes are not due to mere nerve influence, but to the blood itself. The intensity of internal changes in the kidneys indicates a presence of excrementitious substances in the blood seeking an outlet. There lies, in part, an explanation of vascular, cardiac, and renal changes. Most text-books endeavor to present the subject in such a way as to make one think that atheroma, sclerosis and hypertonic contraction are one and the same thing. But the surgeon might treat a broken leg for tumor of the brain just as well as the physician might treat atheroma for sclerosis.

Dr. N. S. Davis, Chicago: In certain arterial diseases the arterial wall still retains its power to contract; I have observed that other physicians often overlook this fact. It is a fact that not only healthy normal walls but diseased arterial walls possess this tonicity or power to contract. Furthermore, many times a diseased arterial wall has a greater degree of tonicity and power to contract, or is more easily stimulated to contract, than a healthy arterial wall. When the artery is compressed the cessation of the flow of blood through it depends not entirely on the pressure of the blood inside the artery, but first on the thickness and tonicity of the arterial wall—in other words, on the rigidity of the arterial wall; and second, on the size of the lumen of the artery. Therefore, when a hemomanometer is applied to an arm and the arteries in it compressed it must be remembered that the compressibility of the artery as well as the pressure of the blood within the artery is being measured. The so-called arterial tension really means the compressibility of the artery.

DR. I. J. WOLF, Kansas City, Mo.: I am especially interested in two points that Dr. Eichberg brought out. First, mental influence is capable of producing a rise and fall in the blood pressure the same as physical labor. This is somewhat akin to what Parlow demonstrated regarding the work of the stomach: that the influence of the mind is as powerful in causing a flow of gastric juice as food itself. The other point emphasized, which I have often noticed in my clinical work, is that the increase in blood pressure is generally compensatory, and that to interfere with this compensatory increase in blood pressure is often dangerous. In such cases, when patients present themselves with a high blood pressure, the question is not so much what the blood pressure is at present, but what it has been before. If it was, for instance, 280 before and the kidneys were doing good work with such a blood pressure, it would certainly be dangerous to try to reduce it, or, if already lowered, to reduce it still further by the use of nitrites or the like. In such cases, though the blood pressure may seem dangerously high, the use of digitalis is more indicated and better able to remove untoward symptoms than the use of blood-pressure-reducing remedies. If, in addition, it is seen that through proper diet and hygiene the patient's blood pressure is not increased beyond the necessities of the case, the patient's welfare is guarded. High blood pressure does not necessarily mean a competent heart; nor does it exclude the use of digitalis.

DR. JOSEPH L. MILLER, Chicago: In many cases of hypertension it is not necessary to institute any treatment. All no doubt will agree that most frequently these cases are due to the condition of the kidneys. The question then arises whether or not a lowering of the blood pressure reduces the elimination from the kidneys. There has been a considerable amount of work done on this subject and on the relation between the lowering of the blood pressure and the elimination from the kidneys. The most accurate work on this subject has shown that, when the blood pressure was reduced from 20 to 25 mm. of mercury, for example, and a careful determination of the elimination of water and solids from the urine was made covering a number of days, there was a decided reduction in the elimination of solids through the kidneys.

DR. S. ST. JOHN WRIGHT, Akron, Ohio: Blood pressure is only one of many pressures which modern methods of living affect. The changed relations existing between patient and physician demand consideration. In these days of meters and instruments of precision, which are now in most homes, the doctor must still be a leader as was the family doctor of old. He can not afford to be without apparatus. For the neurotic and morbidly introspective patient an array of apparatus might be injurious. In such a case the trained finger of the doctor, educated by the sphygmomanometer, will give him a working knowledge of the blood pressure and reassure the patient.

DR. C. F. HOOVER, Cleveland: There are instances in which lowered arterial tension in patients with Bright's disease causes a profound depression. In cases of chronic interstitial nephritis—and this is a fact that I have verified a number of times—with the elimination of a very small amount of urine in twenty-four hours, the use of diuretin or caffein is not followed by diuresis; in these cases there is a high arterial tension and an oliguria. But when I lower the arterial tension there is a marked diuresis. Caffein or diuretin are without effect on the excretion of urine; but when trinitin is administered, lowering the arterial tension, diuresis occurs promptly. Dr. Wright wants a man of modern times and not of the old school. It is the use of the blood-pressure apparatus which teaches clinicians how to estimate blood pressure by touch.

DR. JOSEPH EICHBERG, Cincinnati: It was not with a view of measuring the blood pressure alone that I presented the instrument; but I wish to call attention to its availability in the routine examination of patients. It is not in determining the absolute blood pressure that much can be learned; not from its high or low reading, but from consideration of the blood pressure in connection with the symptoms. In the study of heart disease, the determination of the heart murmur alone really means nothing. After recognizing a certain cardiac murmur a proper analysis must necessarily determine its source. And so with the determination of the blood pressure; in hypertension only a proper study can determine whether the heart, the arteries or the nervous system is at fault. The most important feature in connection with the blood pressure is the determination of the compensatory action of the heart, the adaptability of the heart after a measured amount of exercise. Having determined the blood pressure of an individual at rest and in exercise, one should then note how the heart behaves. If the heart is competent, if fully able to compensate, the high pressure is not a dangerous factor. The criticism of the instrument which I present is well deserved in the main. The instrument of von Recklinghausen has the defects inherent in all instruments of this nature, but the errors are easily controlled. It does depend on the condition and tension of the metallic spring; but this element in error can be checked at any time by comparison with a standard gauge. The instrument is portable and can be readily carried to the bedside of a patient. It enables one to obtain promptly both the diastolic and the systolic pressure. It has manifest advantage over other instruments that require the use of mercury. Erlanger's instrument can not be carried around; its place is in the office or in the hospital ward.

UTERUS AND STOMACH.

THEIR ANATOMIC, PHYSIOLOGIC AND PATHOLOGIC RELATIONSHIP.[*]

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ST. LOUIS.

In no specialty do we hear so much of reflex symptoms and reflex neuroses as in gynecology. Those of gastric origin are an especially prolific source of local gynecologic treatment and, as a recent article by Reder[1] indicates, of operative interference also. From a purely clinical standpoint, hardly any two abdominal organs stand in closer relationship than the stomach and the uterus. Thus we have the nausea and loss of appetite during menstruation, the vomiting and craving for certain special foods during pregnancy, the various gastric disturbances accompanying the menopause and the frequent association of gastric and gynecologic diseases. This has led many writers to believe that there must be some special nervous connection between these two organs. In presenting this subject, my motive is to show once more how much is hypothesis and how little is fact in this field of study. I was also able to collect forty-four additional observations of the association of gastric and gynecologic symptoms, taken partly from the clinical records of the Washington

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[*] Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

[1] Trivial Pathologic Conditions of the Uterus and Adnexa Considered as Causes of Severe Gastric Disturbances: Amer. Jour. Obst., 1905, lii, 667-74.

University Hospital and partly from the private histories of Dr. A. E. Taussig and myself.

ANATOMY OF THE PARTS.

According to Morris,[2] the sympathetic system can be divided into:

1. The two sympathetic trunks lying proximal to and parallel with a vertebral column.
2. The great prevertebral plexuses, of which there are roughly three, the cardiac, the solar and the hypogastric, each of which is subdivided.
3. The numerous terminal ganglia and plexuses situated either within or close to the walls of the various organs.
4. The trunks and rami connecting the ganglia with each other and thus contributing to the plexuses, or connecting the ganglia with other nerves, or with the organs with whose innervation they are concerned. These connecting trunks may be divided into central branches connecting the sympathetic with the cerebrospinal and central systems; associative trunks, those connecting sympathetic ganglia on the same side of the body; commissural branches, connecting ganglia on the opposite sides of the body; and terminal or peripheral branches, those which pass from the ganglia to their final distribution.

The nerve supply of the stomach comes for the greater part from the sympathetic system by way of the solar plexus. There are some contributing fibers from the vagus. The nerve supply of the uterus comes from the sympathetic system by way of the hypogastric plexus and the precervical ganglia. Both organs possess within their coats a network of sympathetic ganglia. The connection of these two organs by means of the sympathetic system with the cerebrospinal system seems certain. Just in what way and along what path this connection takes place is, however, still in doubt.

There is lacking positive evidence of any anatomic connection between sympathetic nerve fibers and the ganglionic cells of the central or spinal nervous system. There is, therefore, as yet no anatomic basis for the occurrence of a reflex impulse through the sympathetic system.

THEIR PHYSIOLOGY.

If there are some hazy points in the anatomy of the sympathetic, there are even more in the physiology of that system. The occurrence of certain phenomena, apparently reflex in origin, can not be denied. We have, for instance, the stimulation of uterine contractions through irritation of the breasts. The explanation of such a sympathetic reflex is a very difficult matter. Langley[3] has shown that these are not reflexes in the usual sense of the word. By employing the degeneration method, the fibers carrying the excitation could be found to have their trophic center neither in the ganglion itself nor in its periphery. He explains these so-called axon reflexes on the basis of an impulse traversing backward along a collateral branch of a nerve fiber to a sympathetic ganglion cell, and being thence transmitted to the suitable organ. We know that both stomach and uterus may be cut off entirely from their connection with the central and sympathetic nervous systems and still be able to functionate perfectly. Kurdinowski[4] has thus cut off the uterus of rabbits from all nerve supply and brought about automatic uterine contractions by the use of various irritants. In a similar way Cannon[5] and Cushny[6] have shown by x-ray observations of the stomach that after section of the greater and lesser splanchnic nerves in cats, the movements of the stomach continued as before. Nevertheless it seems probable that these organs do not ordinarily functionate by means of their automatic system, but that this action takes place through the sympathetic nerve trunk.

MENSTRUATION.

It is not an easy matter to decide whether the phenomena of menstruation, of pregnancy and the menopause should be included in a study of physiology, for the steps from the normal to the abnormal are so gradual as to make it difficult to decide where to draw the line between proper and faulty functioning. Considering first the gastric symptoms attending menstruation. In some persons, these are not present; in others, apparently in equally good health and presenting on careful examination no evidences of gastric disease, we find at the menstrual period pronounced nausea and loss of appetite. We know that at this time there are usually decided changes in blood pressure, occasionally fever of 1 to 2 degrees and various disturbances of the nervous system.

Gastric analyses have been made in a series of cases by Elsner,[7] Kehrer[8] and Kretschmy.[9] I, also, have made three observations in this point. They are as follows:

Case 1.—*History.*—M. M., colored, aged 19, single, Menstruated March 4-10, 1908. Stomach normal except for occasional nausea. No objective findings. Stomach examination after Ewald breakfast on March 6 (during flow) showed total acidity, 57; free hydrochloric acid, 18; no mucus. Examination on March 15 showed total acidity, 30; free hydrochloric acid, 12; no mucus.

Case 2.—*History.*—M. H., colored, aged 27, married, menstruated Feb. 11-16, 1908. On Feb. 6, 5 days before flow, stomach analysis showed total acidity, 47.5; free hydrochloric acid, 35.5; no mucus. On Feb. 13, during flow, total acidity was 87; free hydrochloric acid, 42.

Case 3.—*History.*—T. S., colored, aged 21, single, menstruated March 5-8, 1908. Stomach analysis, March 4, showed total acidity, 40; free hydrochloric acid, 12. On March 13, total acidity was 33; free hydrochloric acid, 8; no mucus.

Elsner[7] in his fourteen cases found, as a rule, some increase in the total acidity and free hydrochloric acid just before the onset of menstrual bleeding and during the flow a subacidity. Kuttner[10] and Kehrer[8] found a subacidity alone. Kretschmy[9] found delayed digestion. The total number of cases, including mine, that have been examined are less than thirty.

It is evident that on such meager data we are not justified in drawing any positive conclusions. Patients do not readily submit to such repeated stomach analyses unless they have decided stomach symptoms. Another factor making the results thus far of doubtful significance, is the inevitable inaccuracy of all methods of stomach analyses. This has again been brought out recently in an article by Drs. A. E. Taussig and Rush.[11]

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[2] Human Anatomy, 1907.

[3] Jour. Physiol., 1894, xvi.

[4] Klinische Wuerdigung einiger experim. Ergebn. bez. d. Physiologie der Uteruscontraction: Archiv. f. Gyn., lxxviii, 34-51.

[5] The Alimentary Canal After Splanchnic and Vagus Section: Jour. Physiol., xiii, 22.

[6] Movements of the Uterus: Jour. Physiol., xxxv, 1.

[7] Der Einfluss der Menstruation auf die Thaetigkeit des Magens: Arch. Verdauungskrankh., v, 467.

[8] Die Physiol. u. Patholog. Beziehungen der weiblichen Sexualorgane zum Tractus Intestinalis: Berlin, S. Karger, 1905.

[9] Menstrualmagen: Deutsch. Archiv. f. Klin. Medizin, 1877.

[10] Ueber Magenblutungen und deren Beziehungen zur Menstruation: Berliner klin. Wchnschr., 1895, pp. 7-9.

[11] The Clinical Importance of the Uneven Distribution of HCl in the Stomach Contents: Boston Med. and Surg. Jour., Jan. 16, 1908.

To consider the stomach disturbances of menstruation as reflex seems most unnecessary. Recent animal experiments (Halban,[12] Fraenkel,[13] Knauer[14]) point almost conclusively in favor of the view that menstruation results from ovarian secretions circulating in the blood.

A most careful study of the condition of the stomach during pregnancy and the puerperium was made by E. Kehrer.[8] Six hundred and fifty examinations of stomach contents after an Ewald breakfast were made in pregnant women and in no instance was any bad effect on the pregnancy noticed as a result of the introduction of the stomach tube. In the first six months of pregnancy he found the secretion of hydrochloric acid as a rule somewhat lessened. In the last few months of pregnancy, likewise, he found some diminution both in the total acidity and the amount of hydrochloric acid. The motility of the stomach during pregnancy, as a rule, was found to be unchanged. In the first few days of the puerperium there was a diminution in the secretory function of the stomach corresponding to the loss of blood during labor. When a severe hemorrhage had occurred the diminution of gastric juice was very marked. He consequently advises a somewhat restricted diet in the first week postpartum, since this would correspond to the capacity of the stomach for digesting food.

VOMITING OF PREGNANCY.

That exaggerated disturbance of the stomach during pregnancy known as hyperemesis was formerly supposed to be purely a nerve reflex. Now we are coming more and more to regard the nervous cases as the exception and the toxemic cases as the rule.

THE STOMACH AT THE CLIMACTERIC.

When we consider the stomach symptoms arising at the time of the menopause we are practically in the realm of pathology, for ordinarily disturbances at this period are so slight as hardly to deserve special mention. Where more pronounced, they are usually attended by nervous disorders. It is difficult to tell in a given case to what extent the gastric symptoms are due to this nervous condition, to what extent they result from secretory intoxications, and to what extent they are reflex neuroses. A very considerable number of my forty-four cases (23 per cent.) were in women at the time of the menopause.

PATHOLOGY OF THE UTERUS.

Among the pathologic conditions of the uterus that are most frequently associated with gastric disturbances should be mentioned first of all, retroversion. Of Winckler's[15] total of forty-one cases, ten had a retroversion. Sommer[16] gives gastric analysis in 11 retroversion cases. Panecki[17] in 15, Kehrer[8] in 15, Frank[18] in 6.

In my list, there were seven instances of retroversion with gastric symptoms. The findings of these various investigators lack uniformity. In my own list, there were five with subacidity or total absence of hydrochloric acid and two in which the findings were approximately normal. Taking the average of the sixty-five cases thus far examined, we find that in about half of them the hydrochloric acid was unaltered in amount. When a change was noticed it was usually in the direction of diminished amount of hydrochloric acid. Many interesting cases are on record in which a correction of a malposition of the uterus resulted in a sudden and complete cessation of the stomach disturbances. Kehrer,[8] Gellhorn,[19] Eisenhart,[20] Hewitt[21] and others have reported such occurrences and believed that they could absolutely exclude the possibility of suggestion as a factor in the relief of the gastric symptoms. Winckler[15] and Sommer,[16] on the other hand, saw patients in whom, although the uterus was brought forward and kept in perfect position by means of a pessary, the gastric disturbances persisted. In fact, in one of Sommer's patients, the gastric symptoms were distinctly aggravated after the uterus was brought forward. The following case is from my own records:

CASE 4.—*History.*—Mrs. I. W., aged 38, had had two children and no miscarriage. She complained of premenstrual distress, dysmenorrhea, together with nausea, eructations and pain in the epigastrium. The symptoms dated back to her last childbirth.

Examination.—Examination showed a gastroptosis and retroversion of the uterus. Examination of the stomach contents made June 20, 1901, showed no abnormality in gastric secretion, but an impairment of motility.

Operation.—On Oct. 2, 1901, Alexander's operation for the relief of retroflexion was performed, with the hope that her stomach symptoms would likewise be improved. This was found not to be the case.

Result.—Although the position of the uterus was corrected by the operation and the gynecologic symptoms eliminated, her former gastric symptoms returned within a few months and were only permanently relieved by treating the stomach condition itself.

CASE 5.—*History.*—Mrs. M. S., aged 47, complained mostly of dyspeptic symptoms. No genuine gastritis was found, only a gastroptosis, and a movable retroversion.

Treatment and Result.—The position of the uterus was corrected and a pessary put in place, but without any influence on the gastric symptoms or on the findings on gastric analysis.

A large number of these cases of retroversion in which there are symptoms of dyspepsia will be found in women with general splanchnoptosis. Here we are certainly not justified in speaking of reflex neuroses, for both stomach and uterine symptoms arise from one common cause, the relaxation of their ligamentous attachments. The proper treatment for such a condition must, therefore, not be localized to one organ, but should concern itself in an effort to restore to the abdominal walls and pelvic floor their former strength. The following is a case in point:

CASE 6.—*History.*—Mrs. C. G., aged 47, had had three children, and owing to insufficient attention in the puerperium, developed a gastroptosis and retroversion of the uterus. That there was no special disease of the stomach was evidenced by the physical examination and by the analysis of the stomach contents which showed a total acidity of 56, free hydrochloric acid, 29; no mucus present.

Treatment and Result.—An effort to correct the retroversion by massage and pessary caused an aggravation of both pelvic and gastric symptoms. These symptoms were backache. leucorrhea, anorexia and occasional paroxysmal pain in the epigastrium. After five weeks' rest in the hospital, under a Weir-Mitchell treatment, both gastric and gynecologic symptoms were relieved, in spite of the fact that the uterus was still in marked retroversion.

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[12] Ovarium und Menstruation: Verhandl d. Deutsch. Ges. f. Gyn., 1901, ix.

[13] Ueber die Funktion des Corpus Luteum: Archiv. f. Gynaek., lxviii, 438-540.

[14] Ueber Ovarientransplantation: Archiv. f. Gyn., lx, part 2.

[15] Ueber die Ergebnisse von Magenuntersuchungen bei Frauenleiden: Berl. Klin. Wchnschr., 1905, pp. 1041-1044.

[16] Ueber den Zusammenhang Dyspeptischer Beschwerden mit Erkrank d. weibl. Geschlechtsapparates: Centr. f. Inn. Med., 1902, p. 217.

[17] Therapeut. Monatsch., 1892, p. 79.

[18] Archiv. f. Gynaek., 1894, xlv.

[19] Gynecologic Diseases Without Local Symptoms: St. Louis Courier of Med., July, 1902.

[20] Die Wechselbeziehungen zwischen internen und gynaekol, Erkrankungen: Stuttgart, 1895.

[21] Diagnosis, Pathology and Treatment of Diseases of Women: Erlangen, 1869, p. 335.

It will be evident, however, that when such an infinite variety of interpretations are possible, it is wrong to emphasize these therapeutic experiences for the explanation of any pathologic relationship between uterus and stomach.

Other gynecologic diseases, such as uterine myomata, are also frequently found associated with stomach disturbances. There is not time to consider them separately nor do the observations thus far recorded justify any special deductions. I append my own records in the accompanying table. Beside the seven cases of retroversion already cited, there were thirteen other cases in which careful stomach analyses were made. It is noticeable that most of them show a subacidity and absence or diminution of free hydrochloric acid.

Besides these twenty cases, I found data concerning twenty-four other patients in whom a combination of gastric and gynecologic symptoms was found. but without complete records concerning stomach analyses. Of these additional twenty-four women, nine had relaxed abdominal walls with splanchnoptosis, six were entering the menopause, five had chronic pelvic inflammation and the remainder had varying complaints. Winckler also found hypochlorhydria more common, and in eighteen out of thirty-one cases a gastroptosis was present. A large percentage of the patients in Sommer's twenty-three cases had splanchnoptosis with malposition of the uterus. Both Winckler and Sommer obtained the best results by treating the stomach directly.

The main point to determine in this question is whether or not we are justified in classing the majority of these cases as reflex neuroses. Windscheid[22] urges strongly limiting the use of this term. Some limitation has already been made, for was not the phenomena of Basedow's disease

TABLE OF AUTHORS' CASES ILLUSTRATING ASSOCIATION OF UTERUS AND STOMACH.

No.	Patient.	Age.	Children.	Menses.	SYMPTOMS.		DIAGNOSIS.		Last Menses.	GASTRIC ANALYSIS		REMARKS.
					Gynecol.	Stomach.	Gynecol.	Stomach.		Motility.	Secretion.	
1	T. S.	21	None	*Regular 5-7 days, painful.*	Dysmenorrhea, pain in lower abdomen.	Nausea, bloating.	Retroposition of uterus, cervix stenosis.	Gastric neurosis	Mar 2-8..	Well digested, no fragments.	Total Acid. 33, free *HCl 8.*	Gastric symptoms not relieved by curettage. Analysis Mar. 15.
2	M. M.	19	None	*Regular 6 days, painful.*	Dysmenorrhea......	Nausea after eating.	Retroversion..	Normal.	Mar. 4-10	Well digested, no fragments.	T.A. 30, free HCl 12	Analysis Mar. 15.
3	M. H.	27	2 Abortions ...	Irregular 4 days, painful.	Pain in lower abdomen.	Pain in epigastrium af. eati'g	Chronic pelvic inflam.	Possibly ulcus ventriculi.	Jan. 15-20	No mucus, 200cc left.	T. A. 47.5, free HCl 35.5.	Analysis Feb. 6.
4	M. S.	47	No Pregnancy	Regular but scanty.	Backache, dragging in pelvis.	Anorexia, bloating, eructations	Retroversion, menopause.	Gastroptosis...	......	50cc. left, little mucus.	T. A. 13, free HCl 0	Wore pessary but no relief of stomach symptoms.
5	M. A.	24	One.......	Regular 5-7 days, some pain.	Amenorrhea, frequent urination.	Eructations, epigastric pains.	Pregnancy, 3 months.	Gastritis . . .	3 months previous.	Poorly digested.	T. A. 10, free HCl 0	Analysis made when 3¼ months pregnant.
6	M. S.	3	No Pregnancy	Irregular, scanty	Pain in rectum, backache.	Fullness aft. eating, ructus.	Atrophia uteri *menopause.*	Gastritis..	1 year previous.	Well digested mucus.	T. A. 33, free HCl 15	
7	C. W.	24	One...........	Regular 4-5 days, *no pain.*	Pain *in* hypogastrium.	Epigastric, distress aft. meals	Salpingitis, retroversion.	Gastritis.	Nov 8-12	150cc. left......	Acid present, free HCl 0.	Analysis Nov. 16.
8	C. M.	24	One...........	Regular 5 days, some pain.	Pressure in pelvis..	Nausea, vomiting.	Parametritis posterior.	Gastritis...	June 6-10	25cc. left, poorly digested.	Acid present. free HCl 0.	Analysis June 14.
9	B. Q.	34	One...........	*Regular, scanty, painful.*	Backache, leucorrhea.	*Pyrosis, eructations.*	*Endometritis* lac perineum.	*Gastric neurosis*	.. ..	250cc. left, well digested.	T. A. 90, free HCl 60 T. A. 45, free HCl 32	After curettage and perineorrhaphy gyn. symptoms gone but gastric as before.
10	S. P.	48	Twelve........	Irregular 4 days	Pains in hypogastrium.	Vomiting, epigastric pain.	Endocervicitis menopause.	Gastroptosis..	....	50cc. left, mucus poorly digested.	T. A. 80, free HCl 60	
11	J. W.	25	One...........	Regular 3 days, slight pain.	Leucorrhea, pain in lower abdomen.	Nausea, fullness	Salpingitis....	Gastritis..	Feb. 11-14	50cc. left, poorly digested.	Acid present, free HCl 2.	Analysis Feb. 21.
12	C. G.	47	Three	*Too frequent, 3-4 days.*	Leucorrhea. backache.	Epigastric pain. vomit., anorexia	Retroversion, Endometritis	Gastroptosis....	Mar. 14..	15cc. left, no mucus.	T. A. 56, free HCl 29	
13	E. H.	33	Two	Too frequent, 7-8 days.	Pain in lower abdomen.	Nausea, epigastric pain.	Myoma uteri, ovarian cyst.	Gastritis........	....	25cc. left, well digested.	T. A. 22.5, free HCl 0.	
14	E. S.	36	No Pregnancy	Irregular, 1-2 days.	Dysmenorrhea......	Vomiting bad breath.	Dysmenorrhea menopause.	Gastritis........	2½ mths. before.	....	T. A. 10, free HCl 0	
15	M. S.	24	One	Regular 2-3 days, no pain.	Leucorrhea, backache.	Nausea, eructations.	Retroversion..	Subacute gastritis	....	120cc. left, poor digested.	T. A. —, HCl 10	
16	I. G.	38	No Pregnancy	*Irregular 3 days*	Hot flushes.........	Fullness in epigastrium.	Menopause, *fibroid uterus*	Gastritis.........	2 months previous.	Well digested.	T. A. 22, free HCl 10	
17	W. A.	40	No Pregnancy	Irregular, scanty	Leucorrhea....	Vomiting, epigastric pain.	Vaginitis......	Gastric neurosis	April 1-2	100cc. left, well digested.	T. A. 72.5, free HCl 47.	Analysis made Apr. 1, hysterical.
18	P. L.	21	No Pregnancy	Profuse, painful	Dysmenorrhea, pain *in r. inguinal region*	Bloating, ructus, nausea.	Chronic pelvic inflam.	Gastroptosis....	....	100cc. well digested.	T. A. 19, free HCl 38	
19	T. H.	30	Four...........	....	Leucorrhea.........	Nausea, epigastric pain.	Endocervicitis	Gastritis........	....	100cc. left, well digested.	T. A. 55.5, free HCl 41.5.	
20	G. G.	33	Three	Reg., prolonged, not painful.	Leucorrhea, menorrhagia.	Pyrosis, bloating	Endometritis, retroversion.	Gastritis........	....	100cc. left. no mucus.	T. A. 20, free HCl 0	

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[22] Ueber genitale Reflexneurosen: Centralbl. f. Gyn., 1901, pp. 1316-1319.

formerly considered to be purely reflex, and did we not at one time cauterize the clitoris as a means of curing hysteria? Few of us now employ nasal cocainization for the relief of dysmenorrhea. We have come to consider chorea gravidarum and hyperemesis not as reflex, but primarily as toxic conditions. No doubt some think we are going too far. I believe we have not gone far enough. I think Windscheid is right in demanding four postulates for the diagnosis of a reflex neurosis. They are:

REFLEX NEUROSES.

1. There must be demonstrated a direct nerve path from the impulse center to the reflex center. This is a difficult matter where that path is *via* the sympathetic. But waiving this point, to say, as Tuzskai[23] does, that a specially close nerve connection exists between stomach and uterus is not justified by the facts. Certain viscera are tributary to the solar plexus and certain ones to the hypogastric plexus, but we know of no special fibers running from the uterus to the stomach or *vice versa*.

2. The next postulate of Windscheid is that with the abatement of the source of irritation (Reizcentrum) there should also be a disappearance of the reflex symptoms. That this has apparently taken place in a number of the cases reported is true, but in the majority of them the element of suggestion can not be eliminated. We may not have told our patient that the position of the uterus was corrected, but something in the voice and attitude of the physician often convinces her that some new (and, therefore, successful) procedure has been employed. Furthermore, the cases in which gynecologic treatment has been successful in the relief of stomach symptoms would be very apt to be published, whereas the cases of failure would never see daylight.

3. The third requirement is that the organ in which the reflex symptoms occur should not previously be diseased. In other words, how are we to tell that the diminution of free hydrochloric acid or the decreased gastric motility was not present before the onset of the genital condition? This will be capable of proof in but very few cases. That the gastric symptoms did not occur until after a childbirth or miscarriage is not enough, for pregnancy, as we know, affects not merely the uterus, but the entire organism. Moreover, occasionally a reflex gastric neurosis proves at autopsy to be an ulcer or cancer or other objective gastric disease.

4. Finally, Windscheid claims for the proof of the reflex neurosis that the two organs, that of the impulse center and of the reflex center, must not both be affected by the same general disease?

What impressed me most in my own series of cases was the frequency with which I found such a general cause, splanchnoptosis, neurasthenia, menopause, etc. I have already shown how the frequency of gastric disturbances in menstruation and pregnancy can be explained on the basis of an intoxication. And here we must remember that the organ that is most sensitive to intoxications of all sorts is probably the stomach. How many of our infectious fevers begin with nausea and vomiting. It should not surprise us, therefore, if secretory disturbances of the ovary or placenta, acting ofttimes as toxins, produce likewise primarily gastric disturbances. These can not, therefore, be called reflex symptoms since they are due to a general cause.

If we exclude, first, the cases in which physical conditions in the abdomen through relaxed walls and pelvic floor have caused gastric and uterine symptoms; second, the cases in which the condition of the blood, as in anemic or chlorotic individuals, causes altered function on the part of both the stomach and uterus; third, the cases in which there is hysteria, neurasthenia or a general neurotic temperament; and, finally, the cases of toxemia of one sort or another, what is there left to call reflex neurosis? A few cases, doubtless, will be found, but they will, I believe, be in ever diminishing number as our pathology is enrichened and our methods of diagnosis made more accurate. Above all, let us hope that anatomists and physiologists will in the coming years tell us a little more about the sympathetic system. Until this time, we should not be too positive in our assertions regarding reflex neurosis and be doubly conservative in advising operative interference for the relief of such conditions.

DISCUSSION.

DR. J. H. CARSTENS, Detroit: Some of the most troublesome cases to deal with are the very cases in which there are stomach troubles and nervous symptoms of various kinds and, although I am radical ordinarily in operations and believe that in certain cases operation ought to be done quickly, these are the cases in which one can not be too conservative. I have the greatest trouble in convincing patients that they should not be operated on when they believe some wonderful results are possible in this kind of cases. But I know that there are very few such cases in which I can do good. It is sometimes possible to do some good in the way of fixing the uterus, or a kidney that is loose, but in the majority of cases I warn against operation. These patients are born wrong. Their whole nervous system is wrong. It is not medical or surgical treatment that they need, but physical. These cases must be built from the ground up. Months and months of systematic physical exercise are required for this work. By much time and attention in this respect one can do wonderful work in developing the muscles and ligaments so that the abdominal viscera will keep reasonably in place and give them relief.

DR. D. H. CRAIG, Boston: Two years ago I read before one of the divisions of the Massachusetts Medical Society a paper on the hysteroneuroses, so called, with their relation to a thorough physical examination of patients. The general practitioner in an entirely impersonal way is admonished, advised and criticised at every meeting of specialists, and yet, we all realize that the general practitioner can teach us as much as we can teach him. But the criticism that I make of the general practitioner is that, largely through lack of time, he is too chary of careful physical examination of patients. He is too prone to make a diagnosis on the symptoms given by the patient, and there is no diagnosis more frequently given under such circumstances than that the condition is due to reflex influences. Five or six years ago I instituted the requirement that every patient must be examined physically from the chin down. I do not think that the examination of the organs of special sense come into these cases at all. Under that routine it was perfectly surprising to see the way in which the reflex conditions diminished and to note the appearance of actual physical foundations for what had seemed to be reflex conditions. I believe there are many reflex conditions from uterine and ovarian conditions, but many symptoms loosely classed as reflex will under close examination show a physical cause.

DR. F. J. TAUSSIG, St. Louis: I suggest that we gynecologists work hand in hand with internists, more immediately the men who are taking up the study of stomach diseases, so that we can arrive at some more definite conclusion concerning the subject. The gap still to be filled in regarding the condition of the stomach during menstruation, during the menopause and to a certain extent, during pregnancy, can be filled in only by the working of gynecologists in unison with those fitted to make careful stomach analyses.

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[23] Ueber den Zusammenhang zwischen Uterus und Magenleiden: Monatsschr. f. Geb. u. Gyn., xii, 145.

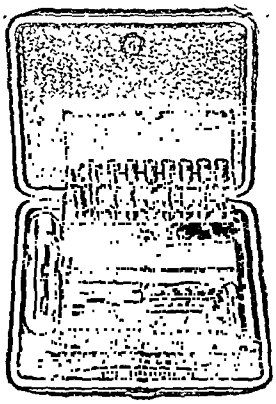
Clinical Notes

A POCKET EMERGENCY OPHTHALMIC TREATMENT CASE.*

WALTER L. PYLE, A.M., M.D.
PHILADELPHIA.

Having in mind the frequent necessity for a complete pocket emergency ophthalmic treatment case, always ready to be placed in the coat pocket when answering an urgent and unexpected call, I have designed and had made the outfit herewith described. The case is made of corrugated aluminum, opening laterally and in appearance resembling a cigarette case. It is very strong and will bear considerable rough handling. The edges are reinforced with steel plates. All the corners are carefully rounded and it is sufficiently small to enable the physician to carry it, if necessary, even in the vest pocket, being 3½ inches long, 3 inches wide and three-quarters of an inch thick. The contents of the main portion of the case are as follows:

Nine small vials containing compressed tablets as follows: Pilocarpin, cocain, dionin, atropin, eserin, adrenalin, fluorescin, homatropin and mercuric chlorid.



The pocket emergency ophthalmic treatment case designed by Dr. Pyle.

These tablets are carried in a suitable rack, which by releasing a spring is raised in such manner as to bring the vials into a convenient position for withdrawing the desired tablet.

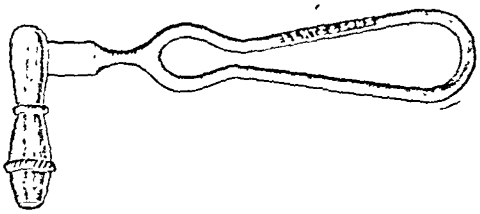
In addition to the foregoing the case also contains:

1 Glass pestle and mortar.
1 Hard rubber stick (for handling by friction the compressed tablets).
1 Pipette.
1 Camel's hair brush.
1 Glass-stoppered bottle of distilled water.
1 Combination corneal spud and thin corneal knife (Graefe).
1 Fine iris-forceps.
1 Fine iris-scissors.
1 Concave retinoscope.
1 Flint-glass condensing lens. (This lens, while testing to a 16 diopter focus, owing to its being made of flint glass, has been mounted on a 10-diopter curve, thereby reducing materially its thickness.)

A NEW PERCUSSION HAMMER.

ROBERT N. WILLSON, M.D.[1]
PHILADELPHIA.

The accompanying illustration illustrates a percussion hammer or plessor that has been gradually evolved from a sense of need and from the inability to find what I wanted on the market. For years I have demonstrated to my own satisfaction and to that of my students the fact that by means of the proper use of the plessor and pleximeter an accuracy of outline can be attained in the examination of the lungs, heart, and other organs that is impossible with finger percussion or by any other means short of the tuning fork and stethoscope. No one plessor has been satisfactory, either with respect to balance, weight or durability. Most of the instruments on the market are fitted with friable rubber handles so long as to be clumsy, and as to invite just what should be forbidden instead of encouraged—a forcible stroke. Not one is designed to promote delicacy of perception of sound, through thorough comfort in its use. It is believed that the all-metal instrument here illustrated is not only practically indestructible, but is calculated to encourage a gentle method of percussion, since a hard stroke with its short handle is next to impossible. The balance is perfect, and at the same time the head of the plessor is sufficiently heavy to produce the desired sound by its own fall. The resulting jar is almost nil to the patient, whereas the note obtained by the impact of the leather tip on either the finger or the ivory pleximeter is more resonant, more sharply defined, and more clear than that obtained by finger percussion. The sense of resistance is preserved to those who desire to make use of it by the employment of the finger as the recipient of the stroke.



A new percussion hammer.

1708 Locust Street.

Special Article

PLAGUE IN CALIFORNIA AND THE ANTIPLAGUE CAMPAIGN.

(By Our Special Commissioner.)

In beginning this report to you, supplemental to that closed Nov. 30, 1907, and published in The Journal, Dec. 14, 1907, it may be well to outline, briefly, the conditions that existed at that time. Human plague was first noted in San Francisco in March, 1900, and existed there until Feb. 29, 1904, on which date the last verified case for some three years was noted. It appeared again May 27, 1907. Verified cases had occurred in several towns in Contra Costa County and in Oakland, Alameda and Berkeley, and it was surmised as far back as 1901 or 1902 that the ground squirrels in the counties of Alameda and Contra Costa had become infected with plague

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

In spite of the urgent request of the U. S. Public Health and Marine-Hospital Service officer in charge in 1903, and in spite of the equally urgent request made in 1906 by the governor of California, the secretary of the treasury would not allow the appropriation of a few thousand dollars for the purpose of determining whether or not the squirrels were infected and would serve, in consequence, to maintain a constant focus of infection. It was not until the present year that funds for this purpose were available—five years after the importance of determining the point had been fully pointed out—and the result has confirmed the supposition. Three ground squirrels infected with the plague have been found in Contra Costa County.

CONDITION OF SAN FRANCISCO.

It is necessary to understand the condition of the city at the time that Dr. Rupert Blue, passed assistant-surgeon, U. S. Public Health and Marine-Hospital Service, was detailed as sanitary officer in charge of plague work in San Francisco, about the middle of September, 1907. The parks and open squares of the city had been utilized for the refugee cottages erected by the relief committee and housed thousands of those who had been made homeless by the fire of April, 1906. Vacant lots had been appropriated by various groups of individuals as private camps and huts of old box-wood, sheet iron, scraps of all kinds had been erected. In all cases these shacks were built on the ground, only being raised therefrom when the conformity of the surface required blocking up some portion of the floor to make it level. Thousands of persons were thus living under the most insanitary conditions; sewer connections were uncommon in these camps, and in many instances where they existed the sewers were destroyed or blocked so that the possibly existing connection was largely theoretical.

Garbage and refuse were dumped into boxes or barrels and then into the nearest vacant lot. The location of some of the camps could be detected by the sense of smell at a distance of several blocks. The choicest sort of rat runs, and rat-abiding places were furnished beneath the floors of these shacks, and an abundant food supply was always at hand. Rats, flies and fleas were so abundant as to have excited much comment from the general run of citizens even before there was any question of the existence of plague. Stables had been hastily erected throughout the burned district and in them grain and hay were kept on poorly constructed wood floors, thus adding to the delectable possibilities for rat habitation and food. In practically every stable in the city numbers (sometimes as many as 75 to 100) of dead rats were swept out every morning.

Even with the announcement of the presence of plague, nothing to speak of was done. The incompetent board of health "blew up"; they seemed to have no idea what to do and would enact something to-day only to undo it to-morrow. The people were apathetic or antagonistic and the press absolutely antagonistic.

Dr. Rupert Blue and his executive officer, Dr. Colby Rucker, arrived about September 15 and by the end of that month had pretty well mapped out the situation and their campaign. They had the support of the newly appointed board of health and of the board of supervisors, the latter body allowing $30.000 a month for the months of September, October and November, 1907. The financial side of the work will be referred to in detail later. Until about the middle of January, however, the work was progressing but slowly and in the face of public opposition, ignorance or intolerance and of the antagonism of the press. In January the situation changed.

AROUSING THE PUBLIC.

Some members of the Merchants' Association became impressed with the serious importance of existing conditions and a general public meeting on the floor of the Exchange was called. A committee of public health was formed, called the Citizens' Health Committee, and within a few days very active work was under way. The activity of the Citizens' Health Committee was directed in three general ways—*the education of the public, the raising of funds and the enforcement of sanitary ordinances.*

In the work of educating the public, justly considered to be of the most vital importance, no pains were spared. A corps of some twenty-five lecturers was organized and from eight to a dozen meetings were held daily. All classes of people were gathered together and told the gravity of the situation and the necessary things to be done. Employers called their employés together and explained the matter carefully. Women's clubs, lodges, school teachers and school children; commercial bodies and labor unions; merchant prince and scavenger—to all was preached the one gospel: keep all food away from the rat and clean up the city. All but one of the daily papers were converted from the policy of denial and ridicule and published from day to day the matter which was prepared by the regularly employed press agent of the Citizens' Health Committee. One paper, *The Chronicle*, has never admitted the existence of plague and has constantly and persistently ridiculed the whole anti-plague fight.

The awakening was something wonderful to behold. Everywhere one went he could hear nothing talked of but plague and rats. A large variety of circulars were printed, mostly short and concise, giving varied information. One, for instance, was a card perforated at the top so that it could be hung on a tack or nail, and this was given to every householder; it was given to the children in the schools, with instructions to take it home to their mothers; it was given to all employés, with instruction to see that it was hung up in the kitchen. It gave short but clear information as to how to keep all food and garbage away from rats. A full rat is hard to catch, but a hungry rat falls an easy prey to the rat-catcher. Many members of the Citizens' Health Committee, very busy men, practically abandoned their own business for weeks at a time and devoted day and night to this work.

The board of supervisors cooperated in every way in their power. Special ordinances were enacted whenever requested. The building laws were amended to provide for rat-proof basements. The keeping of animals within certain restricted districts was the subject of another ordinance, and the scavengers were compelled to abide by wisely formulated regulations. So much for the general and public work; it was good work and carefully and tactfully directed and carried out. Now let me present the more intimate scientific work, done quietly but most effectively.

PLAN OF THE WORK.

Without entering into the minute details of an anti-plague campaign, the broad plan of the work may well be outlined and carefully considered in view of the unexpected result. Two main factors have forcibly presented themselves as being of the first importance in plague eradication:

1. The creation of a perfect system and its rigid enforcement.

2. An infinite attention to detail.

Nothing is too unimportant or too insignificant to demand attention. Before discussing the plan of campaign formulated and carried out by Dr. Blue, in charge, and his executive officer, Dr. Rucker, and in order the more definitely to emphasize the valuable results of this campaign, let me call attention to two points:

First, the chronologic table of cases of human plague:

1907.	
May	1
August	13
September	55
October	34
November	41
December	13
1908	
January	2
None since January.	

Second, of 109 rats examined for plague in August, 1907, 4.58 per cent. were found to be plague infected. Of 12.433 rats so examined in August, 1908, *only* .009 per cent. were found infected.

The objects to be accomplished were the following:

1. Extermination of rats.

2. Prevention of the entrance of rats into human habitations

3. Early discovery of cases of plague in human beings (and in rats).

4. Prevention of the spread of the disease by human beings.

5. Destruction of infection.

6. Education of the general public.

It has already been seen that the last objective was secured and how. To secure the other desired results, the following general plan of operations was put into effect. The general headquarters, the whole, of course, under the direction of Dr. Blue, was divided into three departments: 1. Statistics; 2. personnel and accounts; 3. laboratory. The first two have been under the direction of the executive officer; the last under Dr. Stansfield, and after his resignation under Drs. Fox and McCoy.

The board of health appointed inspectors of the dead and made a rigidly enforced order that no dead body should be removed from the place of death until a proper certificate had been given by the inspector stating that the cause of death was not plague or in any way suspicious. To provide for the proper care of human cases of plague and also to secure due supervision of contacts and suspicious cases, an isolation hospital was built, on the cottage plan, the whole surrounded by a rat proof fence of galvanized iron eight feet high placed on a cement base sunk three feet into the ground. In addition, an inverted trough was placed on the inside of the fence at the top so that if a rat should enter he could not escape.

There was a little delay in getting the laboratory in good working order, but by the early part of October it was ready and shortly afterward it was enlarged so that for many months it has been possible to examine every rat caught or sent in.

SANITARY DISTRICTS

The city was then divided into thirteen sanitary districts, each with its headquarters office, its own sanitary inspector, clerks, telephone and specially detailed policemen. Under the sanitary officer who, in each case, was either a full or an acting assistant surgeon of the service, were two special inspectors whose duties were mainly to look after serving citations to appear and show cause why nuisances should not be abated, look after court work, check up the abatement of nuisances, etc. In passing, it may be mentioned that all cases were so carefully followed that out of 98,763 nuisances reported only 511 arrests have been made.

Each district was further divided into as many sections as the degree of infection, density of population or other causes demanded, each such section being under a field inspector. Each field inspector had two assistants and each assistant had two foremen, each with five laborers under him. Thus it will be seen that the territory to be covered was divided so that each ordinary gang of men had but a small section to cover. The foreman was responsible to the assistant field inspector; he, in turn, was responsible to the field inspector, who was responsible to the district sanitary inspector, who was responsible to the head office. In addition to these regular workers, there were special gangs of poison men, most carefully chosen from the best of the laborers and directed by experts in the handling and placing of poisons.

Every effort was made to build up discipline and *esprit de corps*. The men were carefully examined before being engaged and each was told that promotion awaited him and that after three months' good service he would be given a certificate. Warrants were issued to the foremen and field inspectors and some of them were made special city police. All district officers were put into the uniform of the service, with a result of, it is estimated, about 40 per cent. increased efficiency. Regular schools of instruction were started and "green" men were fully trained before going to work. A minimum rat catch was laid down and any man falling below this was discharged. Every Sunday morning all inspectors met at the headquarters and the work of the past week was gone over, suggestions invited, and the activities for the coming week outlined. This seems to have had a marked effect.

Early in the work a sanitary survey of the whole city was made and all buildings were inspected and rated in regard to their rat proof and non-rat-proof qualities, much as they are rated by the underwriters for fire risks. In each district headquarters a card file giving all the buildings in that district with their rating, and space to note the place and date of finding rats and whether infected or not, was of great value. In the central headquarters all this information was compiled so that the exact condition of any and every building in the city, and whether or not rats had been caught in it, could be determined.

At the request of Dr. Blue, a survey of the sewers was made (it is said, for the first time in twenty years!). This revealed a most deplorable condition. In many instances whole blocks were without sewer connection other than fictional. In others the supposed sewers were merely open creeks or redwood boxes. As a result of this survey, the city has been bonded for the purpose of putting in what will be practically a new sewer system.

Some interesting data concerning poisons have been compiled and will doubtless be published by the service in due course of time. It was found after long and careful tests that all the biologic poisons are worthless. Arsenic and phosphorus are the two chemicals which gave the best results.

Throughout the burned district were large quantities of wreckage, twisted metal, old boilers, pipes, etc., which served as harboring places for rats. Gangs of men were put to work on this and all such wreckage was gathered together and piled on bricks or stones so as to elevate it from the ground.

RAT PROOFING BY ELEVATION.

Rat proofing by elevation was first used in this campaign and was suggested in an interesting manner. Lobos Square camp, a Red Cross camp and in supposedly good sanitary condition, was one of the worst plague foci in the city. It was gone over and over, and yet cases constantly appeared. Finally it occurred to Dr. Blue to elevate all the cottages about two feet from the ground so that the cats and dogs, of which there were plenty in the neighborhood, could get under the buildings and keep the rats away. Thereafter plague disappeared from Lobos Square.

Speaking broadly of the general anti-plague campaign, the measures adopted and carried out were such as to keep all food in the shape of garbage, waste, etc., and the inevitable scraps of markets, restaurants, butcher shops and the like so that rats could not gain access to them; secondly, to catch or destroy the greatest possible number of rats, and, lastly, in so far as possible, to keep rats out of and away from all buildings in which human beings lived or were occupied.

All rats found dead were tagged and sent to the laboratory for examination and identification. All caught alive were tagged and sent to headquarters where they were chloroformed and combed in order to remove the fleas, which were subsequently counted and identified, all the fleas from each rat being placed together in a vial of alcohol. Up to Sept. 1, 1908, 113,743 rats passed through the laboratory and 243,244 had been trapped. They were of the following species in the proportions indicated:

Species	Per Cent.
Mus norvegicus	82.44
Mus rattus	1.66
Mus musculus	15.82
Mus alexandrinus	.0109

Between 900,000 and 1,000,000 rats were destroyed. About 15,000 fleas were combed from the rats and identified as follows:

Species	Per Cent.
Ceratophyllus fasciatus	68.07
Pulex cheopis	21.36
Pulex *irritans*	5.57
Ctenopsyllus musculi	4.48
Ctenocephalus canis	.52

Before leaving the subject of the general work of cleaning up and general anti-plague measures, it is interesting to note that remarkable absence of flies and fleas has attracted the attention of the general public, just as the very small number of cases of infectious diseases has attracted the attention of the medical profession. The general sanitary condition of the city has been improved to a very marked degree The first seven months of 1907 and 1908 show the following comparison·

Cases	1907	1908
Epidemic Diseases	188	153
Typhoid	59	33

Now let us consider the methods followed in the actual fighting of a plague focus In this campaign, for the first time the basis of the work has been the fact that plague is a disease of rats, and consequently the finding of an infected rat was regarded with quite as much import as the discovery of a case of the disease in a human being

The rats when they reach the laboratory are first dipped in mercury bichlorid solution, then tacked by the four feet and belly up on a shingle and the thorax and abdomen laid open They are then examined by an expert, the various glands, together with the liver and spleen, receiving particular attention In the event that a macroscopic diagnosis of plague is made specimens are taken for microscopic examination and inoculations are made

As soon as a plague infected rat is found in the laboratory that fact is imparted to the chief or his executive, who immediately notifies the sanitary inspector of the district in which the rat was found of the fact and the location of the place from which the rat was taken This is first done by telephone, in order that there may be no delay, and is later followed by a letter so that there may be no dodging responsibility Extra gangs of men are then sent into this vicinity and the entire block, together with the blocks in contact, are rigidly gone over and every effort made to eradicate rat runs, possible rat harboring places, etc To accomplish this, in not a few instances floors and sidewalks have been torn up Shacks have been burned Stables have been condemned and closed Furthermore, all persons living so that they have have come in contact with fleas from such a rat are watched for eight days

TREATMENT OF PLAGUE CASES

In the event of the occurrence of a case of plague in a human being, he is at once removed to the isolation hospital The house in which he lived is fumigated and the clothing and bedding are burned All human contacts are kept under careful surveillance for eight days Not only the building in which he lived, but the entire block and the adjoining blocks are subjected to another and more rigid sanitary survey The full limit of the sanitary ordinances is enforced, and by the time that the men have finished their work it is almost certain that no rat could find food or a harboring place in that district outside of the sewers Even the reporting of a suspicious case brings the same immediate and rigid inspection and sanitary invasion into that district The watchword of the campaign has been and is 'Let no rat escape and regard every plague infected rat as of quite as much a menace as a plague infected human being"

August and September are regarded as the most dangerous months in this climate, and last winter all who were interested in the question of plague looked forward with dread to the coming of this present season Yet there are now (September) very few fleas and there has been no case of human plague since January

For a time the disposal of manure from the city stables was a problem owing to the fact that the state board of health ordered that no manure should be shipped from the city to points outside unless the same came from a rat proof stable The market gardeners of the surrounding counties had been for years in the habit of getting this stable manure to use for fertilizer and they at once made objection But the rule was enforced and the result was to stimulate the stable men into compliance with the requirements At the present time, of something over 5,200 stables, more than 70 per cent have complied with every requirement and are practically rat proof The others are in process of adjustment

Early in the course of the epidemic the canal commissioners ruled that no grains or similar foodstuffs could be shipped into the canal zone if the same came from warehouses where rats might have access to them This had a very stimulating effect on the warehouse men and also on the steamship companies and now most of the warehouses are rat proofed and facilities are provided on the docks to store grains, etc in rat-proof granaries

The inspection and fumigation of all craft has been continuously maintained under the direction of Dr Hobdy, passed assistant surgeon of the service, and his work seems to have been excellently performed

FINANCING THE CAMPAIGN

The financial side of the campaign is of no small interest It must be remembered that the city had just suffered the most disastrous fire in history and that all of its various necessary improvements were either absolutely destroyed or else damaged to a considerable degree Probably more than half the sewers were destroyed All municipal buildings were total wrecks Nearly all the schools had been burned Jails court houses, etc were wiped out And yet funds for the plague campaign were urgently needed The city allowed for this work $30 000 a month for the months of September October and November 1907 From December, 1907 to July 1, 1908, $11,000 per month were allowed In July $5,000, in August $3 000 and from August on $2 000

The Citizens' Health Committee has raised and spent very wisely under the direction of Dr Blue about $150 000 Most of this has been expended for supplies, traps garbage cans, etc, and for additional ratcatchers Laborers were employed only through the office of the sanitary officer in charge—Dr Blue—and they were put on the work as fast as good men could be secured and trained

The U S Public Health and Marine Hospital Service paid, up to November 25 the salaries of its own officers in charge of the work From that date to Sept 1 1908 it paid the salaries of the officers and men Since September 1 it has assumed the payment of salaries of officers and men, transportation and all supplies, in other words the entire expense of the campaign a most significant fact

In my report to you of last year[1] occurs the following

'The continued existence of such a disease over such an area, and for the time during which it is evident that the infection has existed here would seem to make the infection a subject for national consideration and protection" Whether or not this report, which was placed in the hands of the supervisors had any influence in determining their subsequent attitude it would be impossible to say But the fact remains that the finance committee of the supervisors very shortly thereafter assumed the position that "the invasion of an epidemic pestilence is a national affair" just as much as would be the invasion of a foreign foe They recommended that appropriations from city funds for anti plague work be discontinued and that the federal government be asked to assume the whole burden, this was the more forcibly urged in view of the distressing financial condition in which the city had been left by the fire As has been mentioned, favorable action was taken on this request by the federal authorities, and now, for the first time in the history of the United States the national government is paying the expenses of a campaign to eradicate a pestilence having gained foothold in one of the states

ANTI PLAGUE WORK OUTSIDE OF SAN FRANCISCO

In Oakland Alameda and Berkeley very little has been done that is more than transitory The antagonism of the citizens is great owing to the fact that but few cases of the disease in human beings have occurred, and none very recently Nevertheless the rat infection is there and plague rats are found from time to time

In Contra Costa County, practically nothing is being done, and here the problem is a very large one, for the towns are small and scattered and isolated cases of plague in human beings have occurred in a number of places in the county Furthermore as already mentioned, the fact that the ground squirrels in that county are infected with plague, a fact suspected four or five years ago, has at last been demonstrated How the problem of attacking the infection now existing in the ground squirrels will be approached is as yet an unknown quantity It is probable that an effort will be made to obtain some funds for this purpose from the legislature which meets in January next, but judging from the apathy and antagonism in Oakland, nothing will be done.

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[1] The Journal A M A Dec 14 1907, 2003

SQUIRRELS PROVE A SOURCE OF INFECTION.

On Aug. 6, 1908, a boy, 10½ years old, in Los Angeles, picked up a sick squirrel near the railroad yards, which are on the outskirts of the city and near the Los Angeles River. He thought the squirrel was thirsty and took it home to give it a drink. The squirrel bit him and in due course he developed a polyadenitis, in every way typical, clinically, of plague. He was perfectly well at the time and the disease made its onset five days after his being bitten, beginning with the classic signs, headache, nausea, vomiting and high fever, with delirium. He was under medical observation after August 11 and about ten days later was seen by a plague expert sent from Dr. Blue's office in San Francisco. The body of the squirrel which bit the boy was not saved for examination, but another and somewhat tame squirrel kept by the boy was found sick and specimens were taken from it and also from the involved glands and the blood of the boy. Examination proved the presence of plague in both the boy and the squirrel.

Whether the squirrel conveying the infection to the boy was transported from some Bay County where the squirrels have had the disease for the last few years, or whether during these passing years of idleness and slumber the infection has passed from rodent to rodent (for there are squirrels all over the state), finally reaching the south, are questions demanding most urgently a prompt answer. What steps will be taken to ascertain the correct answer I do not know, but it would seem to be clearly "up to" the federal government to take cognizance of a situation so pregnant with possibly far-reaching trouble.

Therapeutics

GALLSTONE COLIC

While a large number of individuals are found, on autopsy, to have gallstones in the gall bladder, only a certain proportion of these people, perhaps much less than half, have ever had a gallstone colic. While a tendency to deposits in the gall bladder is present whenever there is imperfect action of the liver and *consequently a concentrated or imperfect chemical secretion* of the bile, gallstones are not likely to be formed until there has been some congestion, or previous inflammation, or at least irritation in the gall bladder itself. Gastrointestinal inflammation of mild type and duodenitis of mild type are of such frequent occurrence that probably the bile ducts readily become inflamed, either by continuity or by reflex irritations. The inflammation has to travel only a little farther to involve the gall bladder, and any infection of the gall bladder or any increased mucous secretion of the gall bladder furnishes nuclei for calculous deposits from an imperfect bile. Consequently, the predisposing causes to the formation of gallstones are rich, irritating foods, gastritis, duodenitis, intestinal indigestion and fermentation, alcohol, sedentary habits and an insufficient amount of water ingested.

The symptoms of gallstone colic are too well understood to require description, but the irritations from gallstones in the gall bladder are readily and perhaps generally undiagnosed. The irregular and infrequent or recurrent pains and distress caused by gallstones in the gall bladder and the consequent reflex disturbance of the digestion are attributed generally to dyspepsia in some form, and the stomach is actively treated. Actual inflammation of the gall bladder, unless there is a formation of pus and consequent fever, with marked local symptoms, is also generally overlooked. Consequently, just as appendicitis is looked for and excluded in the lower abdomen, so cholecystitis, or irritation of the gall bladder, should be looked for and excluded in the upper abdomen before prolonged treatment of supposed other conditions is begun.

Biliary colic being present, morphin sulphate ¼ of a grain and atropin sulphate 1/150 of a grain should be given hypodermatically, at once. If the patient is able, he should be put into a hot bath in order that relaxation of the abdominal muscles may take place, as this favors the passage of the stone. If the patient is unable to go to the bathroom, or if a bathroom is not at hand, hot water fomentations should be applied to the upper abdomen, and frequently changed. It is absurd to apply any mustard or other counterirritant to the abdomen; also, dry heat is not indicated. Moist heat to produce relaxation is the object of local applications. If the pain is abated by the morphin injected and its intensity again increases, ⅛ of a grain more may be given in 1½ hours from the previous injection and again in another 1½ hours another eighth grain may be given, if needed. The dose of atropin should not be repeated. It tends to dry up the secretions, contract the blood vessels and inhibit the action of the morphin. The first dose of atropin is given to cause some slight dulling of the peripheral nerves and thus, perhaps, aid in the action of the morphin in inhibiting the pain caused by the contracting bile duct. If at any time the pain is so inte[illegible] that morphin does not stop it inhalat[illegible] of chloroform are indicated. It is much better to [illegible] inhalations of chloroform to obtain abdomin[illegible]n and anesthesia than to stupefy the pat[illegible]se coma, with morphin.

[illegible] internal aid to the passing of the stone is th[illegible]ntiful drinking of hot water. Warm olive oil, if [illegible] patient is not vomiting, may also be administered on the supposition that it may lubricate the lower end of, or regurgitate up into, the bile duct. No massage should be done or pressure exerted over the upper abdomen with the idea of assisting the passage of the stone.

As soon as the stone has passed into the duodenum *or dropped back into the gall bladder* the pain, of course, instantly ceases, and a patient who has received large doses of morphin then quickly relapses into a deep sleep. It is generally advisable to keep the patient awake for several hours by gently awakening him every time he drops asleep. By following this rule there will be no danger of morphin coma, or, if it should develop, it would be *instantly noted* and the proper treatment inaugurated. The patient should remain at rest for the remainder of the day, and in a few hours should be given a saline purgative.

If the stone does not pass, the pain may still gradually cease, or occur at intervals only. If the stone remains in the common duct of course jaundice soon develops. It then becomes a question of medical and surgical decision as to how long an impacted stone should be allowed to remain before there is a surgical interference. The absence of pain during this period is not a guarantee that the stone is not impacted if other symptoms point to such a condition. A stone long impacted may have so injured or dulled the nerves involved that pain is no longer felt. On the other hand, it is possible that the stone may have passed, but caused sufficient irritation to produce swelling and inflammation of the duct to the point of obstruction and hence jaundice. A dose of calomel or castor oil would then be proper treatment, followed by large doses of olive oil.

Any stomach or duodenal inflammation should be relieved by daily saline laxatives, perhaps best the effervescing phosphate of soda, and the administration of bismuth and soda three times a day, one hour before meals.

℞. gm.
Sodii phosphatis effervescentis..........100| or ℥iv
Sig.: One or two teaspoonfuls, in a glass of water, before breakfast.

℞. gm.
Bismuthi subnitratis |
Sodii bicarbonatis, āā.................. 20| or āā, ʒv
M. et fac chartulas 20.
Sig.: A powder three times a day, one hour before meals.

The diet for a few days should be similar to that for catarrhal jaundice, viz., free from fat. In other words, milk is not a good diet. A little dry toast, broiled lean meat, as steak or chops, hot tea and poached eggs allow sufficient change of diet for a few days. Cold drinks of any kind should not be taken, but plenty of water should be given daily. If there is constipation there should be a daily laxative, as the phosphate of soda, or any other saline. If there is jaundice, daily hot baths are advisable.

A permanent obstruction should not be allowed to go on long without surgical interference, as the longer a jaundice persists the more bloody and dangerous becomes the operation.

As it is rare for a single stone to have been formed, generally several calculi having been started at once, there will probably be other colics. A properly fitting corset or abdominal band sometimes seems to prevent the stones from washing or shaking over into the duct. Whether there are more calculi in the bladder or not, the conditions that caused the first deposition of salts, unless care is taken, will cause the formation of more stones. There is no known drug or water cure or diet that will dissolve stones already formed, although it is possible that in certain unknown conditions a calculus may disintegrate.

There seems to be no doubt, from the statistics now in evidence, that after several attacks of gallstone colic and when there is every reason to believe that there are more gallstones in the gall bladder, either from pain, indigestion symptoms or from localized symptoms which have been proved not to emanate from the stomach or intestines, even without gallstone colics, the gall bladder should be surgically explored, and if found to contain stones, removed. After a feverish attack or several feverish attacks due to a cholecystitis there is no question of the advisability of operation, but the prognosis is so much better before such inflammation has occurred or the danger from either an impacted stone, or from a cholecystitis with future adhesions, that operation should now generally be early advised. Frequently, however, such advice is refused, and some sensible medical treatment must be devised. The better all of the organs of the body functionate, the less imperfect is the bile, and, consequently, the less tendency to gallstone deposits. For such patients a rigid, sensible hygiene and a diet that causes the least indigestion should be outlined. To obtain this object the individual must be carefully studied. No one diet is *the* diet to prevent the formation of gallstones. Alcohol, as tending to inhibit digestion and to congest the liver, should certainly be prohibited. If the circulation is impaired it should be improved with proper cardiac tonics. If the kidney functions are not perfect, the twenty-four hour urine should be studied carefully to determine what is well excreted and what not, and the diet and drink arranged accordingly. The reaction of the liver on the kidney and the kidney on the liver can not be too carefully considered. If the circulation is good and the kidneys are healthy, considerable amounts of distilled water should be regularly drunk. There is no lithia solvent and no spring water solvent for gallstones. A visitation of gallstone patients to a "cure" where they are subjected to rigid régime, their circulation improved, the bowels made to act sufficiently, considerable amounts of water drunk, the diet simple, and means used to increase the circulation in the skin by baths and massage and in the muscles by exercise, will surely improve every such patient, although it will not preclude recurrent attacks of gallstones until the gall bladder is empty, although, as above stated, gallstones may remain in the gall bladder for years without causing colic.

Hyperacidity of the stomach should be combated, and mineral acids should ordinarily not be given, and certainly unadulterated vinegar should be avoided. The vegetable fruit acids which oxidize to alkalis may be allowed and are perhaps beneficial. Whether much alkaline mineral water should be taken depends somewhat on the digestion and the tendency to gout and uric acid conditions, but the sooner that the profession understands that the most solvent water to drink is distilled water, the better will it be for their patients.

The repeated administration of so-called cholagogues, or drugs that are supposed to increase the flow of bile, is not good treatment. Calomel is a cholagogue only in its ability to cause a complete cleaning out of the upper part of the intestine, and is certainly often indicated, but should not be frequently repeated. Salicylic acid preparations somewhat stimulate the secretory activity of the liver, but it is hardly advisable, in the treatment of the condition under discussion, to give a drug so foreign to the system as is salicylic acid. Of course if there is intestinal fermentation and a salicylate, as salol, is indicated, it should be given. A mineral acid, as dilute hydrochloric, or dilute sulphuric, or dilute nitrohydrochloric acid, seems at times to increase the flow of bile to the duodenum, as the duodenum objects to acid and strives to neutralize rapidly any acid that reaches it. These acids, then, sometimes seem to increase the flow of the bile, but except for a short period could not be of any value in disturbances of the gall bladder.

If there is believed to be chronic congestion of the bile passages, the drinking of a glass of hot water an hour before meals is beneficial. Also ammonium chlorid is indicated in this condition, and this drug is just as valuable in subacute inflammation of the bile passages as it is in the subacute inflammation of the bronchial tubes. It may be administered for this purpose as follows:

℞. gm. or c.c.
Ammonii chloridi |
Acaciæ granulatæ, āā.................. 10| or āā, ʒiii
Aquæ menthæ piperitæ ....100| fl. ℥iv
M. et Sig.: A teaspoonful in plenty of water, three times a day, after meals.

If the ammonium chlorid is very disagreeable to the patient, it may be administered in simple carbonated water or in vichy.

It may be well to repeat the necessity for daily thorough evacuation of the bowels, and this should be accomplished by a saline, preferably, or by an aloin, rhubarb, or cascara preparation, as seems best to suit the patient.

While any severe exercise or sudden movement may precipitate a gallstone colic, it has been frequently noted that horseback riding and perhaps automobile riding is beneficial to a patient with a sluggishly acting liver.

in January next, but judging from the apathy and antagonism in Oakland, nothing will be done.

SQUIRRELS PROVE A SOURCE OF INFECTION

On Aug. 6, 1908, a boy, 10½ years old, in Los Angeles, picked up a sick squirrel near the railroad yards, which are on the outskirts of the city and near the Los Angeles River. He thought the squirrel was thirsty and took it home to give it a drink. The squirrel bit him and in due course he developed a polyadenitis, in every way typical, clinically, of plague. He was perfectly well at the time and the disease made its onset five days after his being bitten, beginning with the classic signs headache, nausea, vomiting and high fever, with delirium. He was under medical observation after August 11 and about ten days later was seen by a plague expert sent from Dr. Blue's office in San Francisco. The body of the squirrel which bit the boy was not saved for examination but another and somewhat tame squirrel kept by the boy was found sick and specimens were taken from it and also from the involved glands and the blood of the boy. Examination proved the presence of plague in both the boy and the squirrel.

Whether the squirrel conveying the infection to the boy was transported from some Bay County where the squirrels have had the disease for the last few years or whether, during these passing years of idleness and slumber, the infection has passed from rodent to rodent (for there are squirrels all over the state), finally reaching the south, are questions demanding most urgently a prompt answer. What steps will be taken to ascertain the correct answer I do not know, but it would seem to be clearly up to' the federal government to take congnizance of a situation so pregnant with possibly far reaching trouble.

Therapeutics

GALLSTONE COLIC

While a large number of individuals are found, on autopsy, to have gallstones in the gall bladder, only a certain proportion of these people, perhaps much less than half, have ever had a gallstone colic. While a tendency to deposits in the gall bladder is present whenever there is imperfect action of the liver and consequently a concentrated or imperfect chemical secretion of the bile, gallstones are not likely to be formed until there has been some congestion, or previous inflammation or at least irritation in the gall bladder itself. Gastrointestinal inflammation of mild type and duodenitis of mild type are of such frequent occurrence that probably the bile ducts readily become inflamed, either by continuity or by reflex irritations. The inflammation has to travel only a little farther to involve the gall bladder, and any infection of the gall bladder or any increased mucous secretion of the gall bladder furnishes nuclei for calculous deposits from an imperfect bile. Consequently, the predisposing causes to the formation of gallstones are rich, irritating foods, gastritis, duodenitis, intestinal indigestion and fermentation, alcohol, sedentary habits and an insufficient amount of water ingested.

The symptoms of gallstone colic are too well understood to require description, but the irritations from gallstones in the gall bladder are readily and perhaps generally undiagnosed. The irregular and infrequent or recurrent pains and distress caused by gallstones in the gall bladder and the consequent reflex disturbance of the digestion are attributed generally to dyspepsia in some form, and the stomach is actively treated. Actual inflammation of the gall bladder, unless there is a formation of pus and consequent fever, with marked local symptoms, is also generally, overlooked. Consequently, just as appendicitis is looked for and excluded in the lower abdomen, so cholecystitis, or irritation of the gall bladder should be looked for and excluded in the upper abdomen before prolonged treatment of supposed other conditions is begun.

Biliary colic being present, morphin sulphate ¼ of a grain and atropin sulphate 1/150 of a grain should be given hypodermatically, at once. If the patient is able, he should be put into a hot bath in order that relaxation of the abdominal muscles may take place, as this favors the passage of the stone. If the patient is unable to go to the bathroom, or if a bathroom is not at hand, hot water fomentations should be applied to the upper abdomen, and frequently changed. It is absurd to apply any mustard or other counterirritant to the abdomen; also, dry heat is not indicated. Moist heat to produce relaxation is the object of local applications. If the pain is abated by the morphin injected and its intensity again increases, ⅛ of a grain more may be given in 1½ hours from the previous injection and again in another 1½ hours another eighth grain may be given if needed. The dose of atropin should not be repeated. It tends to dry up the secretions, contract the blood vessels and inhibit the action of the morphin. The first dose of atropin is given to cause some slight dulling of the peripheral nerves and thus, perhaps, aid in the action of the morphin in inhibiting the pain caused by the contracting bile duct. If at any time the pain is so intense that morphin does not stop it, inhalations of chloroform are indicated. It is much better to use inhalations of chloroform to obtain abdominal relaxation and anesthesia than to stupefy the patient, or cause coma, with morphin.

The best internal aid to the passing of the stone is the plentiful drinking of hot water. Warm olive oil, if the patient is not vomiting, may also be administered on the supposition that it may lubricate the lower end of or regurgitate up into, the bile duct. No massage should be done or pressure exerted over the upper abdomen with the idea of assisting the passage of the stone.

As soon as the stone has passed into the duodenum or dropped back into the gall bladder the pain, of course, instantly ceases, and a patient who has received large doses of morphin then quickly relapses into a deep sleep. It is generally advisable to keep the patient awake for several hours by gently awakening him every time he drops asleep. By following this rule there will be no danger of morphin coma, or, if it should develop, it would be instantly noted and the proper treatment inaugurated. The patient should remain at rest for the remainder of the day, and in a few hours should be given a saline purgative.

If the stone does not pass, the pain may still gradually cease, or occur at intervals only. If the stone remains in the common duct of course jaundice soon develops. It then becomes a question of medical and surgical decision as to how long an impacted stone should be allowed to remain before there is a surgical interference. The absence of pain during this period is not a guarantee that the stone is not impacted if other symptoms point to such a condition. A stone long impacted may have so injured or dulled the nerves involved that pain is no longer felt. On the other hand, it is possible that the stone may have passed, but caused sufficient irritation to produce swelling and inflammation of the duct to the point of obstruction and hence jaundice. A dose of calomel or castor oil would then be proper treatment, followed by large doses of olive oil.

Any stomach or duodenal inflammation should be relieved by daily saline laxatives, perhaps best the effervescing phosphate of soda, and the administration of bismuth and soda three times a day, one hour before meals.

℞.	gm.	
Sodii phosphatis effervescentis	100	or ℥iv

Sig.: One or two teaspoonfuls, in a glass of water, before breakfast.

℞.	gm.	
Bismuthi subnitratis		
Sodii bicarbonatis, āā	20	or āā, ʒv

M. et fac chartulas 20.
Sig.: A powder three times a day, one hour before meals.

The diet for a few days should be similar to that for catarrhal jaundice, viz., free from fat. In other words, milk is not a good diet. A little dry toast, broiled lean meat, as steak or chops, hot tea and poached eggs allow sufficient change of diet for a few days. Cold drinks of any kind should not be taken, but plenty of water should be given daily. If there is constipation there should be a daily laxative, as the phosphate of soda, or any other saline. If there is jaundice, daily hot baths are advisable.

A permanent obstruction should not be allowed to go on long without surgical interference, as the longer a jaundice persists the more bloody and dangerous becomes the operation.

As it is rare for a single stone to have been formed, generally several calculi having been started at once, there will probably be other colics. A properly fitting corset or abdominal band sometimes seems to prevent the stones from washing or shaking over into the duct. Whether there are more calculi in the bladder or not, the conditions that caused the first deposition of salts, unless care is taken, will cause the formation of more stones. There is no known drug or water cure or diet that will dissolve stones already formed, although it is possible that in certain unknown conditions a calculus may disintegrate.

There seems to be no doubt, from the statistics now in evidence, that after several attacks of gallstone colic and when there is every reason to believe that there are more gallstones in the gall bladder, either from pain, indigestion symptoms or from localized symptoms which have been proved not to emanate from the stomach or intestines, even without gallstone colics, the gall bladder should be surgically explored, and if found to contain stones, removed. After a feverish attack or several feverish attacks due to a cholecystitis there is no question of the advisability of operation, but the prognosis is so much better before such inflammation has occurred or the danger from either an impacted stone, or from a cholecystitis with future adhesions, that operation should now generally be early advised. Frequently, however, such advice is refused, and some sensible medical treatment must be devised. The better all of the organs of the body functionate, the less imperfect is the bile, and, consequently, the less tendency to gallstone deposits. For such patients a rigid, sensible hygiene and a diet that causes the least indigestion should be outlined. To obtain this object the individual must be carefully studied. No one diet is *the* diet to prevent the formation of gallstones. Alcohol, as tending to inhibit digestion and to congest the liver, should certainly be prohibited. If the circulation is impaired it should be improved with proper cardiac tonics. If the kidney functions are not perfect, the twenty-four hour urine should be studied carefully to determine what is well excreted and what not, and the diet and drink arranged accordingly. The reaction of the liver on the kidney and the kidney on the liver can not be too carefully considered. If the circulation is good and the kidneys are healthy, considerable amounts of distilled water should be regularly drunk. There is no lithia solvent and no spring water solvent for gallstones. A visitation of gallstone patients to a "cure" where they are subjected to rigid régime, their circulation improved, the bowels made to act sufficiently, considerable amounts of water drunk, the diet simple, and means used to increase the circulation in the skin by baths and massage and in the muscles by exercise, will surely improve every such patient, although it will not preclude recurrent attacks of gallstones until the gall bladder is empty, although, as above stated, gallstones may remain in the gall bladder for years without causing colic.

Hyperacidity of the stomach should be combated, and mineral acids should ordinarily not be given, and certainly unadulterated vinegar should be avoided. The vegetable fruit acids which oxidize to alkalis may be allowed and are perhaps beneficial. Whether much alkaline mineral water should be taken depends somewhat on the digestion and the tendency to gout and uric acid conditions, but the sooner that the profession understands that the most solvent water to drink is distilled water, the better will it be for their patients.

The repeated administration of so-called cholagogues, or drugs that are supposed to increase the flow of bile, is not good treatment. Calomel is a cholagogue only in its ability to cause a complete cleaning out of the upper part of the intestine, and is certainly often indicated, but should not be frequently repeated. Salicylic acid preparations somewhat stimulate the secretory activity of the liver, but it is hardly advisable, in the treatment of the condition under discussion, to give a drug so foreign to the system as is salicylic acid. Of course if there is intestinal fermentation and a salicylate, as salol, is indicated, it should be given. A mineral acid, as dilute hydrochloric, or dilute sulphuric, or dilute nitrohydrochloric acid, seems at times to increase the flow of bile to the duodenum, as the duodenum objects to acid and strives to neutralize rapidly any acid that reaches it. These acids, then, sometimes seem to increase the flow of the bile, but except for a short period could not be of any value in disturbances of the gall bladder.

If there is believed to be chronic congestion of the bile passages, the drinking of a glass of hot water an hour before meals is beneficial. Also ammonium chlorid is indicated in this condition, and this drug is just as valuable in subacute inflammation of the bile passages as it is in the subacute inflammation of the bronchial tubes. It may be administered for this purpose as follows:

℞.	gm. or c.c.	
Ammonii chloridi		
Acaciæ granulatæ, āā	10	or āā, ʒiii
Aquæ menthæ piperitæ	100	fl. ℥iv

M. et Sig.: A teaspoonful in plenty of water, three times a day, after meals.

If the ammonium chlorid is very disagreeable to the patient, it may be administered in simple carbonated water or in vichy.

It may be well to repeat the necessity for daily thorough evacuation of the bowels, and this should be accomplished by a saline, preferably, or by an aloin, rhubarb, or cascara preparation, as seems best to suit the patient.

While any severe exercise or sudden movement may precipitate a gallstone colic, it has been frequently noted that horseback riding and perhaps automobile riding is beneficial to a patient with a sluggishly acting liver.

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[*For other information see second page following reading matter*]

SATURDAY, SEPTEMBER 19, 1908.

ANTIPLAGUE WORK IN CALIFORNIA.

When one reads of the fearful epidemic of plague of the fourteenth century, which carried off half the population, not only of many Asiatic nations, but also of the principal countries of Europe, that practically wiped out cities, that disrupted social conditions and shattered existing institutions—one is likely to say, contentedly, that this happened in the dark ages, that it could not occur in the enlightened twentieth century. So, doubtless, thought the people of India, where for 200 years no plague existed. But in 1896 they had a terrible awakening, and since that date India has lost by plague over five and a half millions of people. According to Asst. Surgeon-General Eager[1] of the U. S. Public Health and Marine-Hospital Service, there were 1,400,000 cases with 1,200,000 deaths in India last year.

The figures are appalling, and, while they apply to Asiatic countries and while the disease seems to prevail more generally, and the mortality to be greater, among Asiatics than among Europeans, history shows that the disease is no respecter of countries or of peoples. In any event, it is well to recognize the possibilities. In the preface to his exhaustive "Treatise on the Plague," W. J. Simpson says: "Plague takes its own time and opportunity for its development, and it is unwise to be lulled into a sense of security by its apparent impotency to spread in a particular country."

Without being alarmists we may rejoice, therefore, that such radical and persistent efforts have been made on the Pacific coast to eradicate the disease as is indicated by the report of The Journal's special commissioner in this week's issue.[2] This is the first time that the sanitary branch of the federal government has had an opportunity to show what it could do if given a free rein. Furthermore, it is profoundly significant that the federal authorities have, both tacitly and actually, accepted the principle that "the invasion of a pestilence is a matter of national import." Any seaport is liable at any time to the invasion, not alone of an armed human foe, but of a subtle pestilence that may be a greater menace to portions of the country distant from the point of invasion than to the immediate port of entrance. Such a pestilential invasion may be justly regarded, therefore, more as a national danger than as a local epidemic.

It would almost seem that the first flying wing of the "sanitary army" suggested in The Journal some months ago, had been organized and placed on a field footing. Certain it is that in California there are officers and men of such an army, handling a difficult and delicate situation and one of no small gravity, in a thoroughly competent and tactful manner—and getting splendid results. The sanitary work which has been done in San Francisco during the past year by Dr. Rupert Blue, and his executive officer, Dr. Colby Rucker, is of the highest order and should receive the sincerest commendation. They have accomplished much, and this in spite of open antagonism at first and almost continuous apathy. Citizens were finally roused to the existing danger, yet at no time has the community been "panicky." The energies of the roused citizens were tactfully directed into the most serviceable channels and there was apparently no money or energy wasted.

It is evident that sanitary work of this sort must be placed in the hands of trained and competent men; such are not found in every community and at a moment's notice. If this episode of plague in California shall show beyond question the absolute necessity for a standing sanitary army, the value of the demonstration will many times repay the cost thereof. The national rather than the communal importance of pestilential invasion, and its opposition by skilled fighters backed by the weight of the federal resources, are but emphasized in the reported occurrence of a case of plague in Los Angeles. There are rodents in every portion of the United States and the possibility of conveyance from rodent to rodent is by no means to be ignored, for we know that climate has but little to do with the occurrence or distribution of plague. Our pitifully small "sanitary army"—the U. S. Public Health and Marine-Hospital Service—seems to have on its hands the largest and most serious problem that has as yet presented itself. If it can handle the fight to completion as successfully as it seems to have conducted the opening campaign in San Francisco, it will have thoroughly established for itself a permanent place in the government of the people for the people, and will have as absolutely protected the citizens of our country from calamity as could an unlimited standing army or a countless navy. Plague in San Francisco or Los Angeles is as much a menace to Chicago or Boston as to the cities of the Pacific coast.

PROPRIETARIES, PIANOS AND PROBITY.

A correspondent, in calling attention to one of a series of resolutions we quoted last week,[1] comments as follows: "Had this resolution been passed by the American Medical Association and been endorsed and published by The Journal, I am inclined to think that frenzied protests would have arisen in certain quarters about the attempt of the Association to throttle 'independent medical journalism.'" The resolution referred to by our correspondent reads as follows:

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[1] The Present Pandemic of Plague: Pamphlet prepared and published under the direction of the Surgeon-General of the U. S. Public Health and Marine-Hospital Service.

[2] Special article, page 1010.

[1] Miscellany Department, The Journal A. M. A., Sept. 5, 1908 p. 858.

> RESOLVED, That this act should be so drawn that periodicals continuing to publish advertisements, determined by such commission to be fraudulent, should be subject to fine and exclusion from the mails of the United States until such misleading and fraudulent advertisements be excluded.

As this resolution was adopted by the National Association of Piano Dealers, we may expect to hear no protests except from the manufacturers of fake pianos. We may assume, however, that those organs which such manufacturers control will come out with spirited editorials denouncing the attempts of the "piano trust" to put the "independent piano manufacturers" out of business. Such periodicals will "view with alarm" the deep-laid plot to cripple "independent piano journalism." Casuistry is much the same wherever found; whether it relates to pianos or proprietaries.

Apropos of commercial probity, a recent article by a New York lawyer, Everett W. Abbot,[2] is worthy of study. Mr. Abbot, in commenting on certain tendencies in the law which have been handed down to us and yet which are unjust, calls attention to the phrase *Caveat emptor*, "Let the buyer beware." "This maxim," he says, "which relieves the seller from the burden of much misrepresentation, has had an untold influence in sapping the morals of the Anglo-Saxon race. A more stringent attitude of the courts, a firmer resolve to compel him who makes representations to live up to them, if it had been fully adopted and sternly carried out in the past, would have had a tremendous uplifting effect to-day on the honesty of the people."

Such things as these—magazine articles, action on the part of manufacturing bodies, etc., are straws which indicate the direction taken by the breeze of business morality that is sweeping the country. The indications are encouraging that not much longer will the fight for decency and truth in advertising be confined to the proprietary medicine world. The position of splendid isolation which has hitherto been held by the comparatively few publications that have insisted on truthfulness in their advertising, no less than in their editorial pages, will, we hope, soon be a thing of the past.

IS TRYPANOSOMIASIS PREVENTABLE?

Since early in the nineteenth century trypanosomiasis has been known as the West African lethargy, or sleeping sickness. Slaves who were imported to the West Indies and to Brazil suffered from it. It is considered to have been endemic originally in a small area near the West African coast, between 15 minutes north and 15 minutes south of the equator, and to have spread thence a thousand miles up the Congo to Stanley Falls, and to the Uganda protectorate. It has now appeared in many other regions, from the Sudanese basin of the Bahr-el-Ghazal in the north, nearly to the southern cape; from the western Congo states to German East Africa. It is a gruesome commentary on the white man's eagerness to assume the burden of regenerating his black brother that the disease seems to have been enormously extended by reason of the "rapid transit"[1] procedures instituted by the former.

Diseases akin to trypanosomiasis, but principally afflicting animals, are found in India (surra, of which the *Trypanosoma evansi* seems to be the causative agent); in the Philippines (where there is also a surra, perhaps identical with that of India); in the Transvaal (a comparatively harmless variety), and in South America (the *mal de caderas—T. equinum*). It seems now to be established beyond doubt that the infectious factor in human trypanosomiasis is the *T. nepveri* or *T. gambiense* (discovered by Nepveu in 1898), a flagellate protozoon found in the blood and cerebrospinal fluid. To the latter fact are no doubt due the lethargy and other symptoms referable to the nervous system. The parasite is found also in horses, cattle and other animals. Koch discovered it in the blood of the crocodile inhabiting the shores of Lake Victoria Nyanza. It is transmitted from animal to man and from man to man by the tsetse fly (*Glossina palpalis*), a voracious blood-sucking insect; it is not yet certain whether or not this insect is the only intermediary. The protozoon may live in its proboscis forty-eight hours after its imbibition, according to one observer, from five to six days according to another, after which time there is no danger of infection from the bite. Minchin[2] found that the parasite is simply inoculated mechanically into the sufferer, the process here differing from that in malaria, in which the mosquito is a true host, in whose alimentary canal the plasmodium undergoes a complicated developmental cycle before infection can be effected. It is generally the natives who suffer from trypanosomiasis; but the white man is by no means immune. Many Europeans in Africa have been victims, and some have died after returning to Europe.

The preventive methods to be pursued are fairly well understood. Last April the second International Congress of Sleeping Sickness met in London. The British government, whose interests in Africa—the Anglo-Egyptian Sudan, British East Africa, the Central African Protectorate, Rhodesia and other regions—are so great and vital, was of course represented; as was also the French colonial ministry in behalf of the French Congo; Koch appeared for Germany; Portugal sent her delegates; Belgium, Spain, Italy, the Congo Free State, all had their deputies. The British government has decided to establish a national sleeping sickness bureau, with headquarters in London, and Germany has combined with her for the prevention of the disease in Uganda and German East Africa. Publications of two kinds are to be issued: scientific works for the use of those engaged in research or in the medical administration of the infected districts; and less technical literature for the use of government officials, missionaries and other earnest workers. A map will be made of tropical Africa, showing the distribution of the disease and of the various species of blood-sucking insects which might possibly convey it. Europeans intending to visit Africa are being abundantly informed what must be done for self-preservation, and for the safeguarding of the natives whom they may control. In the field is "a veritable army" of altruistic workers. In the centers of infection are established hospitals, laboratories, animal experiment stations and libraries for reference and consultation; reports are constantly being mailed or telegraphed to cooperating and directing headquarters. The expedition dispatched by the Liverpool School of Tropical Medicine has found the tsetse fly in various Rhodesian districts, particularly along the banks of rivers; and it has been advised that special medical officers should travel constantly in the search for cases. It is sought to move the villages inland and away from the river banks—a matter of little inconvenience to the natives, since their huts are easily built, and they are not dependent on the river for food. Each colonial government has charged its police to collect the patients, wherever possible, in central lazarets, from which healthy natives are to be kept away. In Katanga alone (the extreme southeastern province of the Congo Free State) about twenty such stations are now scattered, whereas a year ago nothing was done in this region for sufferers from sleeping sickness. And these posts are now being augmented as fast as colonial physicians can be sent out. Steam vessels are plying the Congo solely to carry patients to these lazarets, some of which shortly after their opening had to accommodate 600 patients. The natives add to the difficulty of this work. Averse to segregation, the negro in the prodromal stage, will not admit he is sick, and will object to surveillance and treatment. All the Congo hospitals are guarded by troops to prevent the escape of convalescents. Everywhere the colossal task is being pushed most zealously, and in this campaign, which has been conceived on gigantic lines, nothing is left undone to save life and to prevent infection.

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[2] The Lawyer's Ignorance of the Law: The Outlook, Sept. 5, 1908, p. 19.

[1] Ricketts, H. T.: Infection, Immunity and Serum Therapy, p. 487.

[2] THE JOURNAL A. M. A., May 30, 1908, p. 1808.

BLACK ART IN THE TWENTIETH CENTURY.

C. H. Carson, of Kansas City, Mo., with whose unsavory career readers of The Journal are familiar,[1] was found guilty in the criminal court of Jackson County on Thursday, September 10, of practicing medicine without a license. Judge Porterfield, the trial judge, assessed the maximum fine of $500 against him. Under the Missouri medical practice act, this offense is only a misdemeanor and consequently can only be punished by fine. This verdict marks the close of a case which has attracted much attention, owing to the long career of the defendant and the ridiculous methods employed by him in treating his "patients."

Much of the credit for the result achieved is due to Mr. George Creel,[2] editor of the Kansas City *Independent*, who has led the fight. Carson was arrested in November, 1906, and through various pretexts the case was delayed until February of the present year. In its issue for Feb. 15, 1908, just before the first hearing of the case, the *Independent* said regarding Carson:

"He knows nothing about medicine, can not even spell or pronounce half the ills he blatantly guarantees to cure. . . . And his methods of treatment! Tissue paper slips, very much like cigarette papers, that he claims to 'vitalize' by holding between his hands. These slips are then given to the patient with directions to pin on the 'nightie' between the shoulder blades 'over the great nerve center of the human body.' Think of it! On the stand under oath he first asserted that he had different treatments for different diseases, but pinned down by merciless questions he could not tell the difference between certain diseases, and finally admitted that he had about the same treatment for everything. For appendicitis, to be sure, he did a little more. In very bad cases, for instance, he would lay his magnetic right hand over the appendix. But the tissue paper slips were his chief reliance—'the vitalized home treatment.'"

It seems almost beyond belief that in this day of public schools and general education a palpable humbug could possibly find any followers. Yet there are, to-day, hundreds of fakers preying on the sick and credulous, whose claims are as ridiculous as those attributed to Carson. We were about to add that such things ought to be impossible in a land where the daily papers are read by every one. Unfortunately, it is the daily papers that make such a career not only possible, but profitable, since it is a certain class of papers which, through passion for advertising and greed for dividends, furnish ridiculous charlatans the publicity they crave. We regret to say that we now have on file articles in praise of "Doctor" Carson of two and three columns length, clipped from the Kansas City *Post*, the Topeka *Daily Capitol* and the Kansas City *Journal*, all so cleverly written as to lead the ignorant or credulous reader to believe that Carson was a great, learned and philanthropic physician.

The suppression of the Reinhardt brothers in Wisconsin and the conviction of Hibbard in Illinois indicate that the speediest way of eradicating quackery and dishonesty is by prosecution under the criminal code for obtaining money under false pretenses. We hope to see this Missouri "healer" called on to prove his claims of wonderful cures in the court room, and to show why he should not be sent to the penitentiary for defrauding his "patients" through false claims as to his knowledge of disease and his ability to cure. It should be firmly impressed on the public that dishonesty in the treatment of the sick is governed by exactly the same principles as dishonesty in any other business Decent and reputable physicians are opposed to quacks and irregulars because the methods of the latter are essentially dishonest and fraudulent Newspapers or magazines which, by accepting advertisements containing impossible claims, allow the faker to delude and swindle the ignorant or credulous patient are just as much parties to the crime of obtaining money under false pretenses as though they carried advertisements of green goods or gold brick men, or aided thieves or pickpockets.

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[1] The Journal, Sept. 1, 1906, p. 690.

[2] The Journal, Feb. 2, 1907, p. 422.

THE DOCTOR IN POLITICS

The part which physicians should take in political activity—or, indeed, whether or not they should take any part—has been the subject of much discussion during the past two or three years A new plea has been added recently to those already uttered, and this from a source outside the medical profession The governor of California has addressed a letter to the council of the medical society of that state, asking that some physicians place themselves in line for election to the two branches of the legislature, in order that they may advise with him on matters pertaining to medical legislation [1] So far as we are aware, this is the first time a request has come officially from the governor of a state to its medical society, urging that representatives of the medical profession take a place in and work with the law-making body For this reason the action of California's executive is truly encouraging One wonders, however, how it will work out, for physicians are not only proverbially poor politicians, but they are, almost invariably, loath to enter into the strife and struggle for political preferment That we neglect one of our civic duties by not taking an active interest in politics, THE JOURNAL has repeatedly pointed out. The matter has become largely a question of initiative Shall medical men first so educate the people to the need of sanitary and health laws, and to the altruistic objectives of medical science that they will demand representation by our members in the legislatures? That this demand would be made, did the public realize the neglect of life and health—and the economic cost of such neglect—exhibited by the ordinary lay legislator, there can be little doubt This request from the governor of California seems to indicate that the day is almost here when the demand will be made

MEMBERSHIP IN THE INTERNATIONAL CONGRESS ON TUBERCULOSIS

Notwithstanding all that has appeared in the medical and lay papers on the subject, it may be questioned whether physicians and the general public fully realize the importance and privileges of membership in the International Congress on Tuberculosis The scientific sessions of the congress are to be held in Washington during the week of September 28 to October 3; the exhibit is to be open from September 21 to October 12. The transactions of the congress will constitute an authoritative presentation of our knowledge of tuberculosis brought down to date. No such complete information on this subject is to be obtained elsewhere, and the four or more volumes which are to be published and sold to non-members for fifteen dollars will be a valuable addition to every physician's library. The mere fact that membership in the congress at a cost of five dollars entitles one to these valuable volumes should in itself be no small inducement Although the success of the congress was long since assured, it should be a matter of national pride to make this success unequaled by past congresses While numbers are not the principal test of such success, nevertheless the present membership of the congress (about 4,000) should be doubled, indeed trebled, in order to demonstrate that America is fully awake to the greatest task which preventive medicine can offer to the present generation Information concerning the exhibit and the scientific proceedings, which has appeared and will be announced further in the columns of THE JOURNAL, indicates the thoroughly international character and extraordinary interest of the congress. More detailed information as well as membership blanks can be secured by application to the secretary-general of the congress, Dr John S Fulton, Colorado Building, Washington, D. C.

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1 California State Jour Med, August 1908, p 253

Medical News

DISTRICT OF COLUMBIA.

Personal—Dr Watson H Muflit, assistant resident physician of the Casualty Hospital, has resigned His successor has not yet been appointed ——Dr William C Woodward has returned from a trip to the Canadian Northwest

Lunchrooms Cleaner.—Health inspectors who for the past month have been inspecting lunchrooms hotels and other places where foodstuffs are prepared have submitted their report to the effect that the eating houses are now in excellent condition The inspections will continue from time to time, and wherever the health regulations have been disregarded warrants will be obtained

Health Report—According to the health and mortality record for the week ended September 5, there were 106 deaths and 111 births Typhoid fever showed a slight decrease, there being 36 new cases reported and 30 patients discharged, bringing the total number of cases under treatment at the close of the week to 201 Five cases of diphtheria, 2 of scarlet fever and 8 of whooping cough were reported

ILLINOIS

Personal—Dr Henry R Harrower has closed his laboratory in Kankakee and moved to Chicago ——Dr Alonzo B Middleton and family Pontiac, sailed for Europe August 29 ——Dr George Mitchell, of the Illinois Hospital for the Incurable Insane, South Bartonville has gone to Europe and is delegate to the International Congress for the Relief of the Insane, to be held in Vienna, October 7 to 11

Home Cure for Consumption—The Lake County Anti Tuberculosis Association has been organized at Waukegan, with Dr. John C Foley, president, and Dr W H Waterson, manager The association expects to erect a building capable of accommodating twenty patients on the edge of Waukegan and near the lake, to cost about $10 000 In addition to its tuberculosis colony, the association intends to conduct an educational campaign among the people of the county

Chicago.

Personal.—Dr. and Mrs. William N. Senn have returned from Europe.——Dr. Alexander H. Ferguson sailed, September 9, to attend the meeting of the International Surgical Congress in Brussels.

Contagious Diseases.—During the week ended September 12, 228 cases of contagious diseases were reported to the department of health, distributed as follows: Scarlet fever, 79; diphtheria, 54; tuberculosis, 28; whooping cough, 16; pneumonia, 8; measles, 6; chickenpox, 3, and other diseases, 4. This is a reduction of 7 cases of diphtheria and an increase of one case of scarlet fever as compared with the preceding week.

Mortality.—During the week ended September 12, 556 deaths were reported, 14 fewer than in the corresponding week of 1907, and 3 in excess of the number reported in the preceding week. At no time in the city's history has so low a typhoid mortality been reported in September. Chief among death causes are the following: Acute intestinal diseases, 144; consumption, 66; nephritis, 36; heart diseases and violence (including suicide), each, 30; nervous diseases and pneumonia, each, 24; cancer, 22; diphtheria, 12; scarlet fever, 10; typhoid fever, 5, and whooping cough, 4.

IOWA.

Sanatorium Opened.—The State Sanatorium for the Treatment of Tuberculosis, at Oakdale, which was opened in February last, now has under treatment 71 patients.

Medical Association Meeting.—The twelfth annual meeting of the Upper Des Moines Medical Association was held at Spirit Lake recently, when the following officers were elected: President, Dr. William E. Bradley, Estherville; vice-president, Dr. Jay M Crowley, Ellsworth, Minn.; and secretary, Dr. Charles S Shultz, Spirit Lake.

Personal.—Dr Thomas F. Beveridge has been elected president; Dr. Elbridge H. King, vice president; Dr. Benjamin E Eversmeyer, secretary; and L G. Burnett, treasurer, of the Hershey Memorial Hospital board of directors, Muscatine.——Dr. Adele Fuchs, Des Moines, has returned from Europe.

MARYLAND.

Temporary Administration Building.—The Municipal Hospital Commission of Baltimore has provided for the erection of a temporary administration building at Sydenham Hospital, to cost about $5,000, and to be so constructed that it may be used for a ward later on, after the permanent administration building has been erected.

Welcome to Delegates.—The foreign delegates to the International Congress on Tuberculosis will be welcomed at Baltimore October, 5. Dr. Thomas B. Futcher is chairman of the entertainment committee, and the program includes a reception at the city health department, an automobile tour of the city, inspection of Johns Hopkins Hospital and Medical School, where luncheon will be served, a trip to Eudowood Sanatorium for Consumptives, an entertainment by Dr. and Mrs. H. Barton Jacobs at their country home, and a public lecture at McCoy Hall by Professor Louis Laundouzy, of Paris.

Baltimore.

Personal.—Dr. Nathan E B. Iglehart was operated on, September 9, at Johns Hopkins Hospital.——Dr. J. G. Schmetzer has returned after a trip through southern Europe.

NEW JERSEY.

Vital Statistics.—During the month ended August 15, 3,209 deaths were reported in the state. Of these 1,084 were under one year of age, 274 between 1 and 5 years, and 686 individuals were 60 years old and over. The principal death cause for the month was infantile diarrhea, which caused 727 deaths, 38 more than for the corresponding month of 1907, and 88 more than for August, 1906. A marked decrease was noted in deaths from infectious diseases, which were far below the average. Among the chief death causes, aside from those already stated, were: Tuberculosis, 326; diseases of the nervous system, 285; diseases of the circulatory system, 252; diseases of the digestive system (excluding infantile diarrhea), 249; nephritis, 189; cancer, 132; diseases of the respiratory system (excluding pneumonia and tuberculosis), 109; pneumonia, 86; suicide, 42; cerebrospinal meningitis, 35; diphtheria, 25; scarlet fever, 21; typhoid fever, 20; whooping-cough, 17; measles, 10; and malarial fever, 7.

NEW YORK.

Another Tuberculosis Exhibit.—The State Charities Aid Association gave a tuberculosis exhibit at the Richmond County Fair which attracted much attention. Charts, diagrams and pictures were exhibited which were designed to give instruction in the prevention of the disease. The models of outdoor porches of inexpensive construction were inspected by many hundreds of visitors.

Studying the Problem of Insane Asylums.—Mr. Albert W. Ferris, president of the State Commission in Lunacy, has just returned from a long European trip, during which he has devoted his time to the study of hospital construction and equipment, securing information which will be useful in the erection of the new hospitals for the insane and in the erection of the projected psychiatric reception hospital in New York. It is imperative that the state should have new hospitals to relieve the present overcrowding and to meet the alarming increase of cases of lunacy.

Buffalo.

Tag Day.—The returns from tag day for the benefit of the District Nursing Association netted between $10,000 and $15,000.

Personal.—Drs. Roswell Park and Edward McGuire have taken a trip to Norway.——Drs. Matthew D. Mann and Max Breuer are on a three weeks' hunting trip to New Brunswick.——Dr. Earl P. Lothrop has returned from a three weeks' trip to Paris.——Health Commissioner Wende is still ill and confined to his home.——Dr. Charles Howard, chairman of the State Prisons Commission, is still confined to his bed in the hospital, but is out of danger.

New York City.

Personal.—Dr George E. Brewer sailed for Europe September 8.——Dr. Louis F. Bishop returned from Europe September 9.——Dr Samuel M Buckner has resumed practice in New York City after a year spent at Saranac Lake, N. Y., in a successful endeavor to overcome pulmonary tuberculosis.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended August 29, 464 cases of tuberculosis, with 141 deaths; 140 cases of diphtheria, with 15 deaths; 144 cases of typhoid fever, with 14 deaths; 30 cases of whooping cough, with 3 deaths; 6 cases of cerebrospinal meningitis, with 9 deaths; 71 cases of measles, with 3 deaths; 85 cases of scarlet fever, with 4 deaths, and 3 cases of varicella, a total of 943 cases and 189 deaths.——There were reported to the sanitary bureau for the week ended September 5, 466 cases of tuberculosis with 155 deaths; 175 cases of diphtheria, with 22 deaths; 57 cases of measles, with 5 deaths; 85 cases of scarlet fever, with 9 deaths; 138 cases of typhoid, with 11 deaths; 7 cases of whooping cough, with 5 deaths; 5 cases of cerebrospinal meningitis, with 1 death, and 8 cases of varicella, a total of 941 cases and 208 deaths.

Art and Tuberculosis Prevention.—The committee on the prevention of tuberculosis of the Charity Organization Society is distributing broadcast through the poorer districts of New York City a colored picture of Venice. On the margins of the picture are the following warnings against consumption:

> A cough may lead to consumption If you have a cold that hangs on, if you even faintly suspect that your lungs are not strong, do not try to cure your self. Go to a doctor, or to the nearest tuberculosis clinic, The New York Dispensary, 137 Center Street, where you will be treated free of charge, if unable to pay. Hours, 11 a m to 12 30 p. m. week days
>
> Sunlight, fresh air, good food, temperate habits are the best means of preventing tuberculosis. Keep your windows open day and night, summer and winter.
>
> Don't spit on the sidewalks or on the floors or hallways of your homes or schools. It spreads disease It is also dangerous
>
> Tuberculosis is not hereditary, but is acquired and generally preventable When you must spit, spit in the gutters, or into a spittoon half filled with water
>
> Compliments of The Committee on the Prevention of Tuberculosis of the Charity Organization Society, 105 East Twenty second Street, New York City.

NORTH CAROLINA.

Medical Colleges Open.—The medical department of the University of North Carolina, Raleigh, opened for its seventh annual session September 7. The only change in the faculty is the appointment of W. H. Braddy, Jessama, as assistant demonstrator of clinical pathology.——The opening exercises of the North Carolina Medical College, Charlotte, were held September 9, Rev. William Duncan making the principal address.

Personal.—Dr. Lionel H. Love, Wilmington, has gone abroad on account of ill health.——The following are the medical members of the state Democratic executive committee: Drs. Robert S. Young, Concord; Philemon J. Macon, Warrenton;

and Isaac E. Green, Weldon.——At the recent Democratic convention for the First Congressional District, Dr. Thomas S. McMullan, Hartford, was elected temporary chairman, and Dr. Andrew L. Pendleton, Elizabeth City, permanent chairman. ——At the recent session of the trustees of Wake Forest College, Dr. Edgar E. Stewart, New York City, was elected professor of medicine.——Dr. Cyrus Thompson, Jacksonville, was unanimously nominated for secretary of state at the recent Republican state convention in Charlotte.——Dr. Edwin H. Bowling, Durham, has tendered his resignation as a member of the board of aldermen.

The Case of the Leper.—There has been much interest in the state over the case of John R. Early of Lynn, who served in the Army in the Philippine service in 1900 and 1901. A few weeks ago he was ordered to Washington for special examination by the pension department. This resulted in the discovery that he was afflicted with leprosy, and the District of Columbia authorities quarantined him in the outskirts of Washington. The North Carolina State Board of Health was advised of the matter and notified to send and care for the patient, but referred the matter to the attorney-general for opinion. Meantime the young wife and infant of Early had been brought to the house where he was quarantined. The attorney-general has now decided that the State Board of Health has no authority to send out of the state for any citizen, and hence can not send for Early, and points out the impracticability of the United States authorities returning him to North Carolina, and suggests that as Early contracted the disease in line of duty, the State Board of Health has nothing to do with the case while the patient is in care of United States officials. He also called the attention of the board to the fact that in case Mrs. Early with the infant should return to North Carolina she would naturally become a pauper, subject for custody and quarantine at the hands of the board. After the formal filing of this opinion the board, through its president, Dr. George G. Thomas, Wilmington, so advised the officials of the District of Columbia.

OHIO.

Typhoid in Penitentiary.—Typhoid fever is said to be epidemic in the Ohio State Penitentiary, Columbus; 15 patients are said to be suffering from the disease, a number of whom are in a critical condition.

Eichberg Memorial.—At a memorial meeting of the Cincinnati Academy of Medicine, held August 24, a resolution was adopted providing for the appointment of a committee to solicit funds to endow a professorship of physiology in the University of Cincinnati to be know as the Eichberg professorship. The following committee was appointed: Drs. Nathaniel P. Dandridge, Edwin W. Mitchell, Alfred Friedlander, Simon P. Kramer, Max V. E. Koehler and Christian R. Holmes.

Personal.—Dr. Robert J. Jones, Greenfield, has returned from Europe.——Dr. James T. Hanson, superintendent of the Athens State Hospital, has resigned.——Dr. W. Watson Conger, Toledo, has been commissioned first lieutenant and assistant surgeon, O. N. G.——Dr. Robert C. Longfellow has been appointed professor of biology and laboratory pathology in St. John's College, Toledo.——Dr. Herbert M. Platter, Columbus, city medical inspector, has resigned to accept the position of inspector of maternity and lying-in hospitals and boarding houses under the State Board of Health.

The Unfortunate.—Dr. Frank W. Hendley, major and surgeon First Infantry, O. N. G., fell from his horse at Fort Benjamin Harrison, near Indianapolis, September 4, injuring his right leg.——Dr. Lark Moon, Columbus, is said to have been committed to the Columbus State Hospital, September 4.——Dr. James E. Torrence, Hamilton, has recovered from his recent illness of six months' duration and has resumed practice.——Dr. Frank D. Bain, Kenton, dislocated his right shoulder and sustained other serious injuries in an automobile accident, August 22.——Dr. John Q. Southard, Marysville, is said to be ill at his home with cerebral hemorrhage.

PENNSYLVANIA.

Typhoid Fever.—On August 27 100 cases of typhoid fever were said to be present in Reading, and in four days preceding that date 28 cases were reported. The health authorities have issued notice that all milk and water be boiled before using. ——Shamrock, near Rockwood, reports an epidemic of typhoid fever.

Contract for State Hospital Let.—The contract for a six-story ward building for the State Hospital for the Criminal Insane at Fairview has been awarded. The building will be the first of a group to be built by the state at Fairview, and the cost is to be $116,980. The hospital buildings when completed will have cost $2,000,000.

Medical College Acquired by University.—The trustees of the University of Pittsburg have purchased the Western Pennsylvania Medical College for $100,000. The transfer of the property is to date from July 1. A new course in sanitary science is to be initiated by the university at the opening of the fall term.

Personal.—Dr. William M. Beach, Pittsburg, who was operated on for the removal of gallstones, May 28, has recovered and resumed practice.——Dr. S. N. Dague, Washington, has been appointed company physician for the Midland mine.——Drs. F. W. Davis, Jeannette H. Sherman and Mary L. Evans, members of the staff of the State Hospital for the Insane, Norristown, resigned September 4. Dr. Evans expects to take an extended trip abroad.

Philadelphia.

Foreign Delegates to be Entertained.—The foreign delegates on their way to Washington to attend the International Congress on Tuberculosis, will be entertained by the citizens of this city at a banquet to be given at the Bellevue-Stratford Hotel, September 25.

Personal.—Dr. S. F. Gilpin has been appointed to the neurologic staff of the Jefferson Medical College and the Jefferson Medical College Hospital.——Drs. John G. Clark, John B. Deaver, Edward Shumway and William W. Keen have returned from Europe.——Dr. Mihran K. Kassabian sailed for Europe September 15. He will visit Cesarea, Asia Minor, his birthplace, and return in November.——Dr. Andrew A. Cairns has been reinstated as chief medical inspector of the bureau of health. Dr. Charles A. Groff, who took Dr. Cairns' position during his recent illness, will be appointed supervising medical inspector. ——Dr. B. Franklin Royer is ill with typhoid fever in Jefferson Hospital.

Health Report.—The total number of deaths reported to the health bureau for the week ended September 12 was 445. This is an increase of 53 over the preceding week and a decrease of 12 from the corresponding week of last year. The principal causes of death were: Typhoid fever, 12; pertussis, 2; diphtheria, 12; consumption, 52; heart disease, 43; cancer, 28; apoplexy, 15; arterial sclerosis, 14; acute respiratory disease, 21; enteritis, 51; hepatic cirrhosis, 6; appendicitis, 5; Bright's disease, 35; premature birth, 9; congenital debility, 6; senility, 4; suicide, 1; accidents, 16, and marasmus, 12. The mortality list included 250 males and 195 females. ——There were 149 cases of contagious disease reported, with 25 deaths, as compared with 173 cases and 19 deaths reported in the previous week.

GENERAL.

Smallpox and Cholera in the Philippines.—The chief quarantine officer reports that during the week ended June 27, 6 cases of smallpox, with 4 deaths, were reported in Manila, and that in the following week 11 cases of smallpox, with 6 deaths, were reported in the city.——Cholera continues to increase in the province of Pangasinan and has spread in the province of La Union, Nueva Ecija and Tarlac. The situation in the province of Capiz has improved, as only 10 cases and 8 deaths were reported during the week ended July 4.——During the same week there were reported a total of 614 cases of cholera and 331 deaths from the provinces north of Manila.

International Conference on Tuberculosis.—The International Conference on Tuberculosis is an organization made up of representatives of national associations for the study of tuberculosis from all parts of the world. It was first suggested by von Schroetter in 1898, but the first conference was held in Berlin in 1902. Since then the conference has met yearly and holds its seventh session in Philadelphia this year. The initial business meeting occurs September 24 at 2 p. m. September 25 and 26 are devoted to a scientific program, which we published August 22. According to the printed program, the subject of tuberculosis and legal rights will be discussed on Friday, September 25, instead of Saturday, September 26, as previously announced. The Hospital Association of Philadelphia has sent out cards of invitation to the lecture of Professor Pannwitz, September 23, and the Pennsylvania Society for the Prevention of Tuberculosis and the Henry Phipps Institute have sent out similar invitations for the lectures of Professor Calmette and Dr. Williams, respectively. These lectures are part of the educational program of the International Congress on Tuberculosis, which meets in Washington, September 21 to October 12.

CANADA.

Communicable Diseases.—Ten soldiers at the military camp, Petawawa, are said to be ill with typhoid fever at the Cottage Hospital, Pembroke.——All the schools of Christiana, B. C., have been closed owing to a serious epidemic of smallpox.

Hospital News.—Although the townsite of Prince Rupert, B. C., the western terminus of the Grand Trunk Pacific Railway is as yet unsurveyed, a modern hospital has been installed there under the charge of Dr. Ewing. It has accommodation for 75 patients, has an operating-room with hot and cold water, electric light, etc.

Personal.—Dr. Robert T. Blanchard, Winnipeg, Man., has returned from Europe.——Dr. James F. W. Ross, Toronto, has returned after a motor tour of Europe.——Dr. T. Slater Johnson has been reappointed demonstrator in the biologic department of McGill University, Montreal, after an absence of three years in Africa and Asia.——Dr. Robert C. Young, Ridgetown, Ont., has disposed of his practice and expects to make a tour of Europe.

Reform in the Medical Inspection of Schools in Montreal.—A drastic reform in the medical inspection of the schools is being made in Montreal. At the present time inspectors have only been looking after the schools for a few months during the year. Commencing with September, however, the city will be divided into twelve districts, twelve physicians will be given permanent and constant work and each physician will be held responsible for the health of his district.

Impure Milk and Infant Mortality in Vancouver.—Dr. Fred T. Underhill, the medical health officer of Vancouver, denies that the infant mortality in Vancouver is heavy as the result of an impure milk supply. He states that Vancouver has a remarkably small infant mortality. In 1906 the total number of deaths from all causes up to 10 years of age was 127. From stomach and intestinal diseases the number was 33, equivalent to a mortality of 0.74 per 1,000. In 1907 the total death rate from all causes under 10 years of age was 239. From diseases of the digestive system under 10 years of age the number was 63, or 1.211 per 1,000.

FOREIGN.

Guinard Prize Goes to Malvoz.—Dr. Guinard, of Ghent, Belgium, founded an important prize to be awarded at five year intervals for the best medical work or discovery promoting the welfare of the laboring classes. The prize for the current five years was recently awarded to Malvoz, director of the state bacteriologic laboratory, for his works on ankylostomiasis and tuberculosis.

The Marienbad Centennial.—This famous watering place in Bohemia celebrated last month its centennial, and the local medical society issued a special souvenir number of the *Prager medizinische Wochenschrift*. It contains articles describing experiences with the Marienbad waters in various kidney and cardiovascular affections, etc., besides a number of other communications, one reporting a remarkable case of dual personality.

Regulation of Sale of Oysters at Paris.—The board of health has induced the police to require that all oysters must have the shells brushed comparatively clean, and that clean drinking water, salted must be used to keep them wet. The salt used for preserving fish must not be taken for the purpose. It is forbidden to wash the oysters taken out of the shells, but they must be kept protected from contamination of all kinds.

Hygiene in the Panama Canal Zone.—C. M. Garcia of Veracruz pays enthusiastic tribute to the work of Gorgas in the Canal Zone in a recent communication in the *Cronica Medica Mexicana*, September 1. He reviews the brilliant-work in the rehabilitation of Finlay's theory, the sacrifice of Lazear, the triumphs of Reed, Carroll and Agramonte in Cuba, of Marchoux, Simond and Salimbeni in Brazil, the teachings of Guiteras in the famous Las Animas Hospital and in the Columbia encampment, the substantial work of Kean in Havana, of White in New Orleans, of Liceaga in the Mexican Gulf coast and of Oswaldo Cruz in Rio de Janeiro. Gorgas and the brilliant pleiad of his assistants have saved the Canal Zone, he exclaims, 'and when the canal is finished, as it soon will be, let no one be so ungrateful as to forget that this stupendous work could never have been completed without the combined efforts of all these enlightened and devoted spirits."

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Sept. 5, 1908.

Diphtheria from Cats.

Dr. Fraser, health officer of Portsmouth, reports 423 cases of diphtheria during last year, many of which he traced to cats. He found that it is not unusual for the cat to be described as having had a "bad cold" before children were taken ill with diphtheria. In the animals he found the Klebs-Loeffler bacillus.

Fatal Gnat Bites.

This summer the gnat bites in some of the North London districts have been remarkably severe. A well-known practitioner, Dr. Andrew of Hendon, succumbed to an attack of erysipelas following a gnat bite. By an extraordinary coincidence the last patient he attended was also bitten by a gnat and died of blood poisoning in a few days. In most of the severe cases the face was bitten.

Study of Tropical Diseases in Jamaica.

Arrangements are being made by the Liverpool School of Tropical Medicine for another expedition to investigate tropical diseases in Jamaica and the insects that are responsible for carrying it. It is intended to send Mr. Newstead, lecturer in economic entomology and parasitology, in the first week in November. He may be accompanied by a medical research investigator whose duties will be to investigate indigenous diseases.

Increase of Lunacy.

The report of the commissioners in lunacy, just issued, shows that on January 1 last there were in England and Wales 126,048 persons (35.67 per 10,000 of the population) certified as insane—2,096 in excess of the previous year. In the past half century a notable increase in insanity has been recorded. On Jan. 1, 1859, the number of certified insane was 36,762, on which the latest figures are an increase of 243 per cent. During the interval the increase of population has been only 79.6 per cent. A steady increase in the number of certified insane is shown by the report.

Mussels and Typhoid Fever.

Dr. George F. Buchan, assistant health officer of Birmingham, after four years of investigation in the pathologic department of the university has come to the conclusion that there are good grounds for believing that mussels convey typhoid fever. Seventy-four cases of typhoid fever have occurred in Birmingham in which the patient had eaten mussels within four weeks of the onset. Dr. Buchan's experiments show that mussels readily imbibe the typhoid bacillus from specifically polluted water. The danger of laying mussels where they may be bathed by sewage-contaminated water is, therefore, manifest. Only one link is now required in the chain of evidence—the discovery, during the time of year when typhoid fever is prevalent, of the typhoid bacillus in the body of the mussel.

VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, AUSTRIA, Aug. 31, 1908.

Properties of the Carlsbad Springs.

The Carlsbad springs are threatened by the neighborhood of mines, chiefly of kaolin. Several times the quantity of water issuing in twenty-four hours has been affected by the sinking of new shafts or the opening of new communications. Precautions have now been taken to prevent any encroachments by the mines and any other changes likely to affect the springs. It was found that the main affluent pipe of the "sprudel" spring had been for many years nearly blocked up by a deposit of lime, and that many other mains were also incrusted. These deposits have been removed. It has been ascertained that the temperature and chemical composition of the water have not changed for about fifty-five years in spite of the altered conditions of the springs.

Centenary of Oppolzer's Birth.

A few days ago the centenary of the birth of Professor Oppolzer was celebrated by the medical faculty in Vienna, and a bust of the clinician was unveiled in the presence of many of his former pupils and friends. Oppolzer was famous for his therapeutic intuition and keenness of clinical observation, which enabled him to make a wonderfully correct diagnosis and prognosis. When revolutionary nihilism in therapeutics was at its height—it was thought that the organic pathologic changes in the body could not be influenced at all—Oppolzer's knowledge of materia medica made him an object of constant admiration and a benefactor to his patients. Before he died in 1871 he had the satisfaction of seeing the adoption of his belief that there is something in judicious therapy and the repudiation of nihilism in medicine.

The Public Interest in Radium Research.

In the northern part of Austria, the Austrian government owns the largest radium-producing mines in the world. Recently the Vienna Academy of Science received from the minister of the interior 4.5 gr. of pure bromid of radium for use in research. An anonymous donation of $100,000 has been made for the purpose of erecting in Vienna a radium institute, at which students from all countries may study the chemical, physical, medical and physiologic action of this wonderful element. The government has promised to provide the required material and funds to meet the running expenses. A site has been already selected, and the existence of the institute is assured. Experiments are now being carried on at Joachimsthal, where the radium ore is found, and in Vienna, to ascertain whether or not water charged with emanations from radium has any medical properties. The results of the research are promising, for the ingestion of such water has been found to be followed by definite improvement in rheumatic and arthritic cases.

PARIS LETTER.

(From Our Regular Correspondent.)

PARIS, FRANCE, Aug. 27, 1908.

Reform in Medical Education.

For some time the defects of the present system of medical instruction in France have been the subject of general discussion. In April, 1907, the ministry of public instruction appointed a committee to recommend changes in the medical curriculum. This commission finished its work on March 21, 1908. The criticisms made on the present system, however, bear less on the organization of the curriculum than on the method of recruiting the professors.

OPINION OF DR. ROUX, DIRECTOR OF THE PASTEUR INSTITUTE.

According to Dr. Roux, who was a member of the commission just mentioned, but in the minority, to change programs without changing the spirit of those who teach, is to accomplish little. At present the professors are chosen from among the assistant professors, the *agrégés*, and the *agrégés* win their positions by public competitive examinations. It is altogether unusual for a professor to be chosen outside the body of *agrégés*. The system, therefore, closes the door of the official professorships against all those who have not succeeded at the competitive examinations. Dr. Roux suggests the suppression of the post of *agrégé* and the substitution of something like the German privat docent system. Those who wish to teach would apply to the faculty, who would grant the authorization under certain guarantees. The candidate would not have to take an examination or compete with others, but would submit his credentials, his references, his work on the subject, and would state that he had at his disposal suitable apparatus and means for teaching. Any one who was thus authorized by the faculty to teach would not be a member of the official faculty, and would receive no salary, but would be paid by his pupils. A sifting process would thus take place among these trial professors, for pupils would not be disposed to pay a teacher from whom they learned nothing.

ADVANTAGES AND DISADVANTAGES OF THE COMPETITIVE EXAMINATION SYSTEM.

A characteristic feature of the French educational system is that all positions on the faculties, as well as those on the hospital staffs, are awarded by *concours*, that is, according to the outcome of public competitive examinations. Although much has been said against it, the *concours* still remains the best means of avoiding, or, at least, of restraining, the evils of favoritism. One of the most serious criticisms made against the competition for the post of *agrégé* is that the judges often try, irrespective of the showings, to pass as many as possible of their own pupils. Favoritism, however, is somewhat checked by the publicity of the *concours*.

Another advantage of the *concours* is that the candidate's preparation trains him in public speaking, and in clear and precise exposition of a subject within a given length of time. Indeed, to the continual demands of the preparation for various *concours* must be attributed that mastery of clearness and perfection of style which all concede to the French systems of education.

The danger, also, lies right here. There are too many public competitive examinations, and perfection of style plays far too great a part in the competitions. Again and again I have heard professors say to candidates preparing for a *concours*: "Practice debating and lecturing, where you can learn to speak and to give to the various divisions of your subject the importance which they deserve. To know is good, but to show that you know is better."

Consequently our young medical men devote themselves for years to discussions, to public speaking, and to that wearisome, fruitless toil which Taine called the "mechanical cram." Sometimes they continue to appear at *concours* until the age of 35; there are members of hospital staffs who have been appointed only at their fifteenth competitive examination! This baneful, empty drudgery, which has only the competitive examination in view, finally cripples the mental powers, causes style to be preferred to substance, and puts an empty, resounding verbosity in the place of science. Professor Debove remarked at the last Congress of Medicine that the abuse of literature was one of the clogs to the progress of medicine, and that many systems which have had their day of success would never have held public attention if their authors had not possessed a literary style which too often masked inconsistency of doctrine.

The purely verbal character of instruction and the tendency to believe that one has made a discovery because he has invented a new term or a well-turned formula, are fostered still more by the fact that the teacher, having attained his post as *agrégé* or his professorship, after long years of exhausting and sterile labor, often aged and discouraged thereby, has neither the inclination nor the strength for independent research. As the salaries are very modest, and sometimes altogether insufficient, the professors try to eke out their incomes by private practice, and finally devote themselves to practice to the neglect not only of scientific research, but of their teaching duties. Hence, the remuneration of the professor by his pupils presents great advantages, since it would cause a young instructor to devote himself to his educational work. Many consider this the first reform to be accomplished.

Another reform demanded is the reduction of the amount of didactic instruction, which predominates even in subjects that can be properly taught only at the bedside. The institution of hospital internes has stood the test of time in France. Dr. Roux makes an exception of the hospital internes when he *declares that the young physicians are ill* prepared for the practice of medicine. Many of the hospital internes, he says, are excellent physicians, not because they have passed the *concours* for the hospital interneship, but because they have received, during the four years of their hospital service, a practical medical education. Ought not this practical education to be granted to all medical students?

In short, as Dr. Huchard has well said: "In a country which has given birth to the three greatest medical revolutionaries of the nineteenth century, Laennec, Claude Bernard and Pasteur, who opened up three worlds to science: auscultation, physiology and microorganisms, French science to day still makes an imposing appearance; and if we can only go forward, reform what has become superannuated, suppress a great number of useless *concours* which paralyze our scientific activity for fifteen or twenty years and bring the finally attained professorship fifteen years too late, we shall soon resume the place which belongs to us, and retain among us more of the foreign physicians who now pass on elsewhere."

BERLIN LETTER.

(From Our Regular Correspondent.)

BERLIN, Aug. 29, 1908.

The Question of Medical Specialties.

In this age of individualization, in which in every field of scientific and practical effort the most extreme division of labor has taken place, it is not to be wondered at that, even in medicine, the specialties are developing more and more, and that at the present time the field formerly cultivated by the general practitioner has been split up into a large group of specialties.

In America, proportionately, the number of specialties is still more extensively developed than with us. But even in Germany the specialties in medicine already can be counted by dozens, and the proportion of specialists to general practitioners is continually enlarging. According to a statistical investigation instituted in March, 1904, by the Prussian ministry of public instruction (*Kultusministerium*) there were in Prussia, aside from the university instructors, about 2,800 special physicians; thus there were for 100 physicians 15.7 specialists. In 34 of the larger cities in Prussia the number of specialists, in proportion to the total number of physicians, varied from 2.04 to 39.86 per cent. In some university cities the percentage of specialists, including the university teachers, amounted to over 40 per cent. Statistics obtained by a private investigation show how greatly the number of specialists has increased in some large cities. According to these figures the percentage of specialists increased from 1885 to 1905 as follows: In Stuttgart from 12.2 to 45.4; in Dresden from 8.0 to 41.6; in Frankfurt-on-the-Main from 7.5 to 41.6; in Munich from 9.2 to 40, and in Leipsic from 10.4 to 37.0. This increase in specialists extends not only to single cities, but is observed throughout the entire country, so that specialists at the present time are located not merely in the large cities as formerly, but even in cities of 10,000 and even fewer inhabitants. To what extent the number of specialties has increased is to be seen also from the imperial medical calendar. There are specialists for each of the various metabolic disorders, for pulmonary tuberculosis, for medical treatment of rupture, for ulcers of the leg, etc. If we seek for the reasons for the choice of a specialty we meet especially with three: first, a pronounced preference and fitness for a particular specialty; second, the hope of earning a better living in a special field than among the great mass of practicing physicians, and, finally, the greater freedom of specialists from the cares of the general practitioner.

That the disproportionate increase of specialists has a serious significance, both for the economic interests of practicing physicians as well as of the specialists themselves and also of their patients, has been repeatedly claimed in medical journals and can scarcely be doubted. The field of labor of the general practitioner, the sources of his income and the sources for the perfecting of his scientific skill are continually being narrowed. In the better situated families, now-a-days, the general practitioner is scarcely consulted any more, but the people go directly to the different specialists and the family physician, formerly generally employed, either very often does not exist at the present day or his task is simply in case of sickness to select the individual specialist. He is, as the saying goes "merely an address book for specialists." It is also clear, on the other hand, that the income of the specialists is injured by their excessive multiplication and that their reputation suffers, as specialists frequently announce themselves as such without adequate special training. These are the so-called "six weeks' specialists." Finally, there is a disadvantage to the patients from these conditions because, by the lack of a family physician the malady is too often not attacked at its root, or they do not reach the appropriate specialists, or they are compelled to suffer from the overactivity of specialists, which has been often enough complained of. For all these reasons the attempt has been repeatedly made, to hinder the excessive growth of this specializing, but an effective remedy has not yet been found; every one of the proposed remedies has its drawbacks.

The establishment of a special examination for specialists has not met the approval of the majority of German physicians, particularly because they feared that by this means the value of the specialist in the eyes of the public would be still further enhanced, and that the general practitioners would be regarded as second-class physicians. The demand for evidence of more extensive preparatory training meets with greater approval. In what way this evidence will be demanded and furnished is not easy to say; various methods have been proposed to this end. The writer of a recent article in the *Deutsche medizinische Wochenschrift* treated the matter very thoroughly and proposed as a remedy that specialists should be forbidden to advertise their titles to the public. He referred particularly to England and France, where frequently the specialty is not displayed on the street signs nor inserted in the directory, and, as I am informed, this custom also prevails in many of the American states.

Some weeks ago the Prussian minister of public instruction announced that the Scientific Commission for Medical Affairs (*Wissenschaftliche Deputation für das Medizinalwesen*) had at his request made the following suggestions: The right of the physician to advertise himself as a specialist for certain departments of practical medicine or to designate himself by any other title of the same significance must be exercised under certain definite restrictions. Special training after receiving the medical degree should be required to justify one in advertising himself as a specialist or with any other equivalent title. The special training should consist in scientific postgraduate education and practical employment during a period which has been shown by experience to be sufficient for independent practice in the selected department. As a rule, three years may be considered as necessary. The special education must be received in the university medical institutes or academies for practical medicine, special departments of large hospitals or as assistant to recognized specialists. A list of the approved institutes and specialists for this purpose will be prepared and published yearly by the proper authorities. The duration and success of the specialistic employment shall be proved by a certificate from the instructing physician. The minister stated that he would prefer to refrain from a legal regulation of the question, and he directed the "medical councils" to take the conclusions of the Scientific Commission as the basis for their action. Some action on the question may be expected.

Care of Cripples.

For a number of years provision has been made in Germany for the deaf and dumb and the blind by the erection of public and private institutions for them, but no such provision has been made for cripples, in the stricter sense. Efforts toward such provision are now being made with two objects in view: first, to help the unfortunates themselves and to secure for them in a certain degree the enjoyment of life, while raising them from the ranks of the beggars, and, secondly, to make them useful members of society and thus relieve the public and private benevolent institutions of their care. One of the last things accomplished by the late Prof. Hoffa was to place himself at the head of an association founded here in Berlin for the care of cripples, and his energy and enthusiasm greatly advanced the work. The association has erected an institute for the treatment and care of cripples in Berlin, in which crippled children are not only cared for, but are to be developed into useful human beings.

The association has been collecting for the first time statistics in regard to cripples to estimate the need for the further erection of sanatoria and of institutions in which the cripples are merely received and instructed in various forms of handicraft (basket weaving, etc.); of the latter there are about thirty so far in Germany. In Germany, excluding Bavaria, Baden and Hesse, for which the returns are not yet complete, there have been recorded about 75,000 cripples of school age, that is, 1.48 per 1,000 inhabitants. About one-half of these cripples are in such a condition that they can not support themselves. For these, numbering about 45,000, there are available at present only 3,000 beds in the various institutions. Fully 10 per cent. of the cripples of school age have received no instruction. In Germany there are, besides, about 5,500 children who are crippled and feeble-minded, and of these only 820 at the present time enjoy the instruction which is necessary for them. The economic importance of systematic provision for cripples is shown in an address which the medical director of the Berlin sanatorium for cripples delivered at its opening. In Berlin there are 2,600 cripples under 14 years according to the census. If we assume that 600 of these are sufficiently self-supporting, without medical aid, there would remain only 2,000 who would become a burden to their relatives or to the public poor authorities, and if we reckon only one mark a day for the care or assistance of each cripple grown to manhood without care and technical training, the community of the citizens of Berlin would need to supply 730,000 marks ($176,200). But if it were possible to make about 93 per cent. of the 2,000 cripples self-supporting, they would earn for Berlin about 1,500,000 marks yearly, so that they would not only entail no drain on the poor fund, but they would increase the wealth of the nation by useful labor.

Correspondence

Coal-Tar and Chronic Eczema.

KANSAS CITY, MO., Sept. 11, 1908.

To the Editor:—In THE JOURNAL, Aug. 8, 1908, I had a clinical note on the above subject. I have just learned that articles along the same line, written by Dr. Brocq, of Paris, had previously been published in the *Annales de Therapeutique, Dermatologique et Syphiligraphique* and in the *Journal de Médecine et de Chirurgie pratique*. While I had never seen nor heard of either of his articles, the suggestion which led me to commence the use of the substance was received in a private letter from Dr. Cowen, a medical friend residing abroad, and from subsequent developments it appears probable that he derived his suggestion from Dr. Brocq's publication. I feel that I have innocently done Dr. Brocq a deep injustice and I desire that he be given full and entire credit for first bringing this remedy before the profession.

R. L. SUTTON.

Pharmacology

BEEF, WINE AND IRON.

A National Formulary Preparation of Doubtful Value.

Criticisms of National Formulary preparations are much to be desired as there have been introduced into that, now authoritative, book on the supposed demand of physicians, many preparations which pharmaceutically and therapeutically are open to grave objections. Among these is Beef, Wine and Iron, which at first thought seems to answer the requirement for a nutriment, stimulant and tonic.

Attention has recently been called by Mr. J. P. Street[1] to the fact that intelligent physicians have long known that the nutritive value of meat extractives was practically *nil.* Mr. Street made analyses of a large number of samples of the Beef, Wine and Iron preparation as sold by druggists either branded with their own name, or with that of some wholesale manufacturer. Of 92 samples only 22 satisfied the National Formulary requirement of 0.007 gm. of nitrogen per fluidram. In the 92 samples the iron varied from 0.025 to 0.355 per cent. with an average of 0.114 per cent., which is considerably less than the required amount.

He details experiments from which he concludes that the process of the National Formulary is unsatisfactory; when the procedure directed was closely adhered to the finished preparation contained only about one-tenth as much iron as the formula indicates. He demonstrated that nine-tenths of the iron used is precipitated during the manufacture and is removed by filtration. Mr. Street makes the following very pertinent comment on the preparation:

> "It is rather difficult to understand the reasons for the admission of a preparation of such doubtful efficacy into the formulary. For all practical purposes, in most cases it is nothing more than sherry wine of more or less questionable quality, to which has been added small quantities of meat extract and either tincture or citrate of iron. Meat extract is recognized as possessing but slight nutritive value, and the amount used in the preparation of beef, wine and iron would have but little value even as a tonic or stimulant. On the other hand, the iron in these preparations might be of value as a tonic during convalescence and in certain blood disorders, but it could be obtained much more cheaply and could be used much more intelligently in other forms and under a physician's direction. The use of such materials by an invalid on his own responsibility likewise exposes him to the danger of acquiring, unconsciously, the habit of alcoholism."

The popularity of this preparation among the laity rests largely on the name, and on the idea that it is possible to extract from meat its nutritive properties and administer them in a concentrated form; much as we can give a considerable amount of a crude drug such as belladonna in a minute dose of the alkaloid, atropin. That this idea is still entertained by many is shown by the misleading labels placed on many brands of "Beef, Wine and Iron." Mr. Street calls attention to this and says:

> "Many of the labels on the samples bear other false and misleading statements, such as 'one-half ounce contains the strength of one ounce of beef,' and 'one tablespoonful contains the equivalent of 1½ ounces of lean meat."

While physicians seldom prescribe this preparation, its sale to the public is largely pushed by druggists and others whose interest in it is purely commercial. Its removal from the National Formulary is earnestly to be desired and physicians should see to it that the public is informed as to its very limited value and they should attempt to offset the psychic attraction which its name possesses.

Fairchild Brothers & Foster and the Council's Report on Diastase Ferments.

We have received a communication from Fairchild Brothers & Foster, in which they say that the recent report of the subcommittee on valuation of diastase ferments misconceives the point of the objection they have made to this report. They have not only in the past advocated and proposed a uniform method of valuation based on the parts of starch converted to colorless reaction in ten minutes, but they now further formally request that all pharmaceutical products of diastase (simple or compound) be submitted to valuation by the particular method of applying the test, proposed by the subcommittee and adopted by the Council on Pharmacy and Chemistry. They point out that their "reply" (to the proof of the subcommittee's report) did not involve an objection to, or criticism of, this subcommittee's test or the results thereof, but was simply directed against the impression conveyed, as they insist, in the "remarks" advanced and again in the "supplementary report."

It may be that in the remarks supplementary to the report of the Council, a wrong impression was conveyed regarding the status of Fairchild Brothers & Foster's product, Holadin. It was not the intent of the report to question the statements of Fairchild Brothers & Foster regarding their products, nor was it intended to convey the impression that the firm misrepresented the digestive value of their product as claimed by the test for valuation previously submitted by them to the Council.

It will be remembered that the main object of the examination on which this report was based was to test the various digestive products on the market by the same method and tests, so that the actual value of each could be demonstrated.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Dr. McCormack's South Dakota Tour.

Dr. J. N. McCormack has just completed a tour of two weeks through South Dakota. His meetings have been well attended and unusually interesting, as may be gathered from the South Dakota press. The *Aberdeen Daily American* says:

> Very interesting was the lecture delivered yesterday evening by Dr. J. N. McCormack, lecturer of the American Medical Association, under the auspices of the Aberdeen District Medical Society. A good sized audience of professional and business men and women listened attentively to the lecture, which was a treat. The aim of the lecturer was to show the awful loss of life that is going on every year in this country, which is entirely unnecessary, and to enthuse his audience to begin a systematic organization which will have for its purpose the elimination and eradication of preventable diseases.

At Watertown the audience was most enthusiastic, and as a result it was decided to organize a local health league. The *Watertown Opinion* says:

> As a result of the lecture delivered in the Grand Opera House last evening by Dr. J. N. McCormack of Kentucky, Watertown will in a short time have a health league. By resolution, the people present decided on this course. At the conclusion of the interesting and instructive address by the eminent man of medicine, several local speakers briefly spoke of the efforts of the doctor and of the benefits which are to be derived from a health league. Among the speakers were nearly all of the ministers of the city.

The Brookings *Press* says:

> A great deal of interest was taken in the lecture by Dr. J. N. McCormack, who told of the conditions which he had found in different communities and of methods which are being advocated for making communities more sanitary and for bringing the medical profession and laymen more closely together in eradicating diseases.

At Sioux Falls Dr. McCormack took up local health matters and described the condition in which he found the Sioux Falls slaughter-houses on the afternoon preceding the lecture. The Sioux Falls *Daily Press* says:

> After the lecture, Dr. McCormack, in speaking to a *Press* reporter, said: "I have visited many of the worst places in the country and Sioux Falls surpasses all of them. I only describe the things as I see them, and the slaughter-houses

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[1] Am. Jour. Pharm., August, 1908.

here are by far the worst of any I have yet visited." At the close of the address, Mayor W. T. Doolittle, who presided over the meeting, called on various persons to express themselves on the subjects as presented by the doctor. The city health officer, Dr. Keller, expressed himself as agreeing with everything that Dr. McCormack had said. Bishop Hare spoke in high commendation of the warfare waged by the speaker against unhealtful conditions and offered resolutions thanking Dr. McCormack for his lecture and assuring him of cooperation insofar as local conditions could be remedied. These resolutions were accepted without a dissenting voice.

Editorially, the *Daily Press*, under the heading, "What is Going Into Our Mouths," comments on Dr. McCormack's lecture and calls on the citizens of Sioux Falls, as well as the honest dealers in food supplies, to insist on rigid sanitary inspection in order "that the public may know what places it is safe to patronize and that a premium may be placed on cleanliness."

The Sioux Falls *Argus-Leader*, besides containing an account of the lecture, discusses, in its editorial columns, the importance and necessity of a national department of public health. The editorial says:

> It is important that we should keep up the Navy and Army and that we should protect the health of the cattle and pigs, and keep rust out of the wheat and the pine beetle out of the trees, but it is little less than a slander on our people that the health of the people, the lives of human beings, should be neglected as they have been since our government was organized. . . . In his lecture Dr. McCormack produced facts which were undeniable and which are in reality a shame on the American people. The Department of Agriculture has expended forty million dollars in the last ten years to solve the problem of diseases to plant and animal life on the farm. It is now proposed to expend two hundred and fifty millions more to exterminate diseases in stock and plant life. No one objects to this expenditure. It is the best investment the American people have ever made; but if it is wise to spend millions to save the lives of horses and cattle and sheep . . . it certainly ought to be worth while to spend a few millions every year to protect the lives of the American people, to educate them in the important problems of sanitation, to save the babies and to prolong the lives of the adults. In the opinion of this paper Dr. McCormack made out his case.

At Yankton a large and enthusiastic audience listened to his address. The *Yankton Herald* says:

> Seldom is it that a Yankton audience is impressed as at last night's gathering and most would call the lecture a most opportune talk on subjects that are too seldom brought before the public.

At Mitchell, according to the *Daily Republican*, the highly pleased audience at the city hall was composed of representative citizens of the city. Mayor A. E. Hitchcock presided and introduced the speaker. At the close of the address the mayor suggested that the physicians and women's clubs of the city organize a local health league, which recommendation was enthusiastically adopted.

Dr. McCormack's tour in South Dakota has only added additional proof that the public will gladly and willingly cooperate with the medical profession to secure better sanitary conditions as soon as it is generally understood what is needed and how better conditions can be brought about.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Second Month.

General Subject for the Month: Infection, Immunity and Serum Therapy.

FIRST WEEKLY MEETING.

INFECTION.

[This subject to be divided among three members as indicated.]

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Infectious Agents.—I. Living (pathogenic parasites). A. Macroparasites (pediculi, etc.). B. Microparasites: (1) Bacteria (fission fungi). (2) Fungi of complex organization (aspergillum). (3) Protozoa (plasmodium malariæ). II. Non-living (toxins). A. Animal toxins (snake venom). B. Vegetable toxins: (1) Non-bacterial (abrin, ricin). (2) Bacterial: a. Soluble bacterial toxins (diphtheria). b. Intracellular bacterial toxins.

Sources of Infectious Agents.—a. Occurrence in healthy beings; on skin and mucous membranes, in saliva, intestinal excreta, urine, bile, etc., "bacillus carriers." b. Transmission by animals: 1. Suffering from transferable diseases, anthrax, tuberculosis. 2. Mechanical carriers of germs, flies. 3. Intermediate hosts, mosquitoes. c. Aerial infection, exanthemata, tuberculosis, etc.: dust infection, droplet infection. d. Water-borne infection, typhoid, dysentery, etc. e. Soil and infection. f. Food and infection.

....

Routes of Infection.—Skin, conjunctiva, mucous membrane of respiratory and digestive tracts, genital tract, selective invasion as cholera vibrio in intestine.

Dissemination of Pathogenic Germs.—Local, as tetanus bacillus, toxins being absorbed; direct extension, erysipelas; blood metastases, pyemia; lymphatic metastases, infected wounds mechanical extension, aspiration pneumonia.

Elimination of Infectious Germs.—Direct, in abscesses, conjunctivitis, diphtheria, etc. Indirect, through blood into urine, bile, milk, etc.

Latency of Microbic Infections.—Diphtheria bacilli in throat, typhoid bacilli in gall bladder or periostitis, recurring attacks of malaria and rheumatism, bacteria in immunized persons and animals.

Mixed and Secondary Infections.—Variations in intensity of primary and secondary invaders.

Products of Infectious Agents.—Toxins, bacterio-toxins, bacterial hemolysins, phytotoxins. Endotoxins. Bacterioproteins.

General Resistance to Infectious Agents.—Degrees of virulence of pathogenic bacteria.

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Symptoms Due to Infectious Germs.—Period of Incubation. Local effects, serous, fibrinous, suppurative, diphtheritic, hemorrhagic, necrotic and proliferative changes. Leucocytosis; effects on red corpuscles, hemolysins, hemagglutinins; changes in blood-making organs, spleen and bone marrow. Parenchymatous degeneration in heart, kidney, liver, spleen. Changes in nervous system. Fever, due to different substances in blood, crises and recurring fevers. Effects on metabolism; due to changes in intake, chemical and in amount; to changes in output, as albumin through diseased kidney, loss in diarrhea, etc.; changes in chemical processes in body. Formation of antibodies; antitoxins, amboceptors, agglutinins, precipitins and opsonins.

Reference Books for the Second Month.

Ricketts: Infection, Immunity and Serum Therapy.
Sternberg: Immunity: Protective Inoculations in Infectious Diseases, and Serum Therapy.
Ehrlich: Collected Studies on Immunity.
Metchnikoff: Immunity in Infectious Diseases.
Bolduan: Immune Sera.
Allen: Opsonic Methods of Treatment.
Cabot: Serum Diagnosis of Diseases.
Vaughan and Novy: Cellular Toxins.
Jowett: Notes on Blood Serum Therapy.
Osler: Modern Medicine, Vol. II.

Queries and Minor Notes

ARTICLES ON THE OCULAR TUBERCULIN REACTION

————, Cal, Sept 4, 1908

To the Editor —I wish references to the best articles on the tuberculin reaction observed in the ophthalmic test, covering the technic, results, deductions, etc A P

Answer—We are constantly receiving questions similar to the above We remind our readers that we issue with every volume, that is, twice yearly, a very exhaustive index to the current medical literature, which is intended to enable the reader to answer just such questions as this for himself All the items here given —and they form only a small number of those available, nearly all the references to foreign journals being passed over—were obtained by referring to the aforesaid index This is a task with which it seems scarcely fair to burden this office

The following original articles, which have appeared recently in The Journal, cover much of the ground specified

Baldwin, E R Ophthalmic Tuberculin Diagnostic Test, Dec 14, 1907, xlix, 1969

Smithies, F, and Walker, R E Calmette's Ophthalmic Reaction to Tuberculin, Jan 25, 1908, l, 259

Rosenau, M J, and Anderson, J S. The Ocular Reaction to Tuberculin, a Warning, March 21, 1908, l, 961

Tice F Ocular Reaction to Tuberculin June 13, 1908, l, 1982

Clark, C P Conjunctival Tuberculin Reaction, June 20, 1908, l, 206

Parker, H C · The Calmette Ocular Tuberculin Reaction, June 27, 1908, l, 2124 (with a summary of literature)

Satterlee, G R A Serious Result of the Ocular Tuberculin Test, June 27, 1908, l, 2133

The following are some of the more important recent communications on the ocular tuberculin test in other periodicals·

Barney, C N, and Brooke R Ocular Reaction to Tuberculin, *Med Rec*, July 18, 1908, abstracted in The Journal, Aug 1, 1908, li, 438

Bass, C C Ocular Tuberculin Reaction in Diagnosis of Tuberculosis, *New Orleans Med and Surg. Jour*, March, 1908 abstracted in The Journal, May 16, 1908, l, 1653

Calmette, A Sociologic Importance of the Ocular Diagnosis of Tuberculosis *Bull de l'Acad de méd* de Paris, Jan 14, 1908 (an important article), abstracted in The Journal, Feb 29, 1908, l, 733

de Lapersonne, F Is the Ocular Reaction to Tuberculin Free from Danger for the Eye? *Presse méd*, Dec 7, 1907; abstracted in The Journal, Jan 18, 1908, l, 244

Dietschy, R Cytologic Findings on Conjunctival Tuberculin Reaction, *Munchen med Wchnschr*, June 16, 1908; abst in The Journal July 18, 1908, li, 265

Downes, H Tuberculin Ocular Reaction, *Brit Med Journal*, Dec 7, 1907; abst in The Journal, Jan 4, 1908, l, 76

Eyre, J W H, Wedd, B H, and Herz, A F Tuberculin Ocular Reaction of Calmette, *Lancet*, London, Dec 21, 1907, gives a wide review of continental work on the subject; abst in The Journal, Jan 18, 1908, l, 242

Floyd, C, and Hawes, J B · Ocular Tuberculin Reaction, *Jour Med Research*, February, 1908; abst. in The Journal, April 4, 1908, l, 1149

Hamman, L · Use and Value of Tuberculin in Diagnosis of Pulmonary Tuberculosis, *Arch Int Med*, June, 1908; abst in The Journal July 25, 1908, l, 348

Lecky, H C · Calmette's Ocular Reaction, *Brit Med Jour*, March 28, 1908, abst in The Journal, April 25, 1908, l, 1381 (The same issue of the *British Medical Journal* contains articles on the same subject by H E R Stevens and H de C Woodcock)

MacLennan, W · Ocular Tuberculin Reaction, *Brit Med Jour*, Dec 7, 1907; abst in The Journal, Jan 4, 1908, l, 77

Moro E Tuberculin Inunction as a Substitute for the Ocular Reaction, *New York Med Jour*, June 27, 1908, abst in The Journal, July 11, 1908, li, 166 (The same *New York Medical Journal* contains also articles on the ocular reaction by A L Benedict and H H Pelton)

Napier, A. A Suggestion of Caution, *Glasgow Med Jour*, January, 1908; abst in The Journal, Feb 15, 1908, l, 567

Van Duime, P and Stocké, E · Tardy Ocular Lesions After Diagnostic Instillation of Tuberculin, *Presse méd*, March 14, 1908

Wolff Eisner, A Ocular and Cutaneous Diagnosis of Tuberculosis, *Beitr z Klin d Tuberk*, ix, No 1 (a review to date); abst in The Journal, March 7, 1908 l 806

Wolff Eisner, A, and Teichmann, F · Importance for Prognosis of Ocular and Cutaneous Reaction of Tuberculin, *Berl Klin Wchnschr* Jan 13 1908; abst in The Journal, Feb 22, 1908, l, 650

Webster, J. S, and Kilpatrick, J. A One Hundred and Twenty one Cases Tested with Calmette's Tuberculin, *Brit. Med Jour*, Dec 7, 1907, abst in The Journal, Jan 4, 1908 l, 77.

Weber, F P: Calmette's Ocular Reaction for Tuberculosis (a cautionary article). *Brit Med Jour* Feb 15, 1908; abst in The Journal, March 14, 1908, l, 920

Zaniboni, B Ocular Reaction to Tuberculin, *Policlinico*, Rome, Jan 5, 1908, abst in The Journal, Feb 8 1908, l, 492 (The abstract covers also an important article by G. Serafini in the *Gior d r. Accad di Med*, Turin, November, 1907)

The original papers by Calmette and Wolff Eisner were published, respectively, in the *Comptes rendus de l'Academie des sciences*, June 17, 1907, and the *Berliner klinische Wochenschrift*, 1907, xliv, 700

The announcement is just made of the publication of the Ophthalmic and Cutaneous Diagnosis of Tuberculosis by Dr. Wolff Eisner, Berlin London John Bale, Sons and Danielsson, Ltd. Price 7s 6d, net.

ESPERANTO IN MEDICINE

M. P Corret, secretary of the Redaction of the Lingvo Internacia, Paris, France, is preparing a thesis on "The Utility and Possibility of the Adoption of an Auxiliary International Language by the Medical Profession" M Corret is therefore desirous of obtaining information on examples of misunderstanding at international congresses, due to diversity of languages, the acceptance of Esperanto as an official language by medical congresses and societies, the presentation to international congresses of communications in Esperanto, the difficulties of bibliographic research in foreign works, medical works containing mention of or extracts in Esperanto, etc The more varied the sources of information, the more valuable will be the thesis, and the more effective in its bearing on the adoption of Esperanto The author will give the name and nationality of every informant Esperantist physicians may send their communications in Esperanto direct to Monsieur P. Corret, 12 Rue de la Vergennes, Versailles, (S et O), France Non-esperantists willing to help may send their information in English to Dr Grace E Papot, 1038 Jackson Boulevard, Chicago, who will forward a translation to M Corret

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U S Army, week ending, Sept 12, 1908

Dulin, C T M R C, ordered to active duty in the service of the United States

Treuholtz, C A, cont surgeon, leave extended one month

Reasoner, M A, first lieutenant, leave of absence extended four days

Craig, C F, captain, detailed member of competitive examining board at Fort Leavenworth, Kans, vice Captain Bloombergh, hereby relieved

Gosman, G H R, captain, relieved from duty at Fort Morgan, Ala, and ordered to Fort Barrancas, Fla, for station and duty

Shepherd, J M, M R C, granted thirty days' leave of absence.

Patterson, R U, captain, granted leave of absence to visit the United States, to take effect on date of arrival in United States of the transport *Kilpatrick* and ending Oct 15, 1908

Bartlett, C J captain, granted leave of absence to visit the United States, to take effect on date of arrival in the United States of the transport *Kilpatrick* and ending Sept 15, 1908

Koyle, F T, M R C, ordered to active duty in the service of the United States

Boards of officers of the Medical Corps, as hereinafter constituted, are appointed to meet at the places designated for the purpose of conducting the examination of applicants for appointment as first lieutenants in the Medical Reserve Corps of the Army·

Richard, Charles, lieut col, Wilson, W H, major; Wolfe, E P, captain, at New York City.
McCaw W D, major Huggins, I B, captain; Barber, J R, first lieut at Washington, D C
Fisher, H C, major, De Loffre S M, captain; Owen, L J, captain, at Columbus Barracks Ohio
Bradley, A E, major, Winn, R N, captain, at Jefferson Barracks, Missouri
Davis, W B, lieut col, at Omaha
Munson, E L major, at Fort Leavenworth, Kans
Farr C W, captain at Fort McKinley, Me
Heysinger, I D, captain at Key West Barracks Fla.
Chamberlain, W P, major, at New Orleans, La
Peed G P captain at Fort Ontario, N Y.
Reynolds F P major at St Paul Minn
Kulp J S major at Fort Meade, S D
Lewis W F, major, at Fort Sill, Okla
Schreiner, E R major, at A G H Presidio, San Francisco
Keefer, F R major, at Presidio Monterey, Cal
Stark A N major at Vancouver Barracks Washington
McCulloch, C C Jr, major, at Ancon Canal Zone Panama

The boards will be governed by such instructions as they may receive from the Surgeon General of the Army, to whom the reports of the boards will be rendered direct

Eber, A H, M R C relieved from further duty in the Philippine Islands and on expiration of his present leave of absence, ordered to Fort DeSoto Fla

Hanson, L H first lieut, ordered to Fort Sam Houston Texas, for station and duty

Miller A L, M R C, granted twenty days leave of absence

Keefer, F R, major, will proceed from Presidio of Monterey, to San Francisco on or before Sept 10 1908 reporting on arrival to the adjutant general Department of California, for assignment to duty as acting chief surgeon of the department, during the absence of Col Geo H Torney, chief surgeon

Richard, Charles, lieut col; Carter, W F, major; Shaw, H A, major, Winter, F A, major; Wilson, W H, major ordered to Fort Myer, Va Sept 16, 1908, for the purpose of undergoing the physical examination and testing their skill and endurance in horsemanship

Hussey, S W., dental surg, granted fifteen days' leave of absence

Navy Changes.

Changes in the Medical Corps, U S Navy, for the week ending Sept 12, 1908

Heneberger, L G medical director, commissioned medical director from Sept 2, 1908

Percy, H T, medical inspector commissioned medical inspector from Sept 2, 1908

Wise, J C medical director detached from command of the naval medical school hospital, Washington, D C, and ordered to duty as a member of the naval examining and naval medical examining boards Washington D C

Boyd J C, medical director ordered to additional duty in command of the naval medical school hospital, Washington, D C

Wheeler, W M surgeon, ordered to the Navy Yard New York, September 12

Mink, O J, passed asst surgeon, detached from the naval recruiting station Chicago and ordered to the naval medical school, Washington, D C

Rodman, S S passed asst surgeon, unexpired portion of leave revoked, ordered to the naval recruiting station, Chicago

Dessez P T passed asst surgeon detached from the *Chicago*; unexpired portion of leave revoked and ordered to duty at the naval hospital, Las Animas Colo

Hathaway, G S asst surgeon, ordered to duty in connection with fitting out of the *Wyoming*, and to duty on board that vessel when commissioned

Health Reports.

The following cases of smallpox yellow fever cholera and plague have been reported to the Surgeon General, Public Health, and Marine Hospital Service during the week ended September 11, 1908

SMALLPOX—UNITED STATES

Alabama Mobile Aug 23-29 1 case
California San Francisco Aug 23-29 2 cases.
Indiana Indianapolis Aug 24-30 3 cases
Iowa Sioux City Aug 23-31 3 cases
" " 26-Sept 1 1 case
" " 1-31 1 case
" Aug 23-29 6 cases; Milwaukee, 2 cases

SMALLPOX—FOREIGN

Arabia. Aden, Aug 4-10, 2 deaths
Borneo Sandakan June 15-30 1 death
Brazil Rio de Janeiro July 26-Aug 2, 519 cases, 231 deaths; Santos July 20-26 1 death Pernambuco, July 16-30, 29 deaths
Canada Halifax Aug 23-29 1 case
Ceylon Colombo July 18-25 14 cases 2 deaths
China Amoy July 15-21, present
Ecuador Guayaquil July 25-Aug 8 8 deaths
Egypt Cairo Aug 6-12, 2 cases, 1 death
India Bombay July 27-Aug 4, 8 deaths, Calcutta July 19-25, 5 deaths
Indo China Cholen July 19-25 1 case, 1 death; Saigon 2 cases 1 death
Italy General Aug 10-16, 115 cases; Genoa July 1-31, 3 cases, Messina July 19-25 present, Naples Aug 2-15 9 cases 2 deaths
Java Batavia July 19-25 3 cases
Mexico: Mexico City July 19-25 25 deaths
Norway Christiania Aug 9-15 22 cases
Philippine Islands Manila July 12-18 15 cases 5 deaths
Portugal Lisbon Aug 9-15, 4 cases
Russia Riga Aug 9-15 2 cases Warsaw, 4 deaths
Spain Barcelona Aug 4-10 1 death
Turkey in Asia Bagdad July 19-25 20 cases, 4 deaths

CHOLERA

China Hankau July 19-25 8 cases 5 deaths; present among Europeans and July 27 epidemic among natives; Hongkong 4 cases 3 deaths
Japan Moji, Aug 8 2 cases one case from Yamaguchiken; Yokohama, Aug 17, 3 cases 1 death on British steamer in quarantine
India Calcutta, July 19-25 9 deaths; Madras July 24-31, 13 deaths
Indo China Cholen, July 19-25 9 cases, 9 deaths
Philippine Islands Manila July 12-18 1 case 1 death; provinces general 1,445 cases 788 deaths
Russia Rostov July 26-Aug 14, 87 cases 37 deaths, government districts St Petersburg Sept 9 15 cases, Astrakhan, Aug 1-7 92 cases 38 deaths, Saratov 152 cases 74 deaths, Samara 4 cases 3 deaths, Don, territory, 14 cases 10 deaths

YELLOW FEVER

Cuba Antilla Sept 8 1 case, 1 death
Santiago Santiago Province, Firmeza, Aug 22 1 case; Santiago from Mayari, Sept 7, 1 case
Ecuador Guayaquil July 25-Aug 1, 1 death
Mexico Laguna del Carmen Aug 29 2 cases; Vera Cruz, Sept. 7, 1 case

PLAGUE—UNITED STATES

California Los Angeles Aug 11, 1 case

PLAGUE—FOREIGN

Azores Terceira, July 1-Aug 11, 29 cases, 17 deaths
Brazil: Rio de Janeiro July 26-Aug 11, 1 case
British East Africa Port Florence July 5-11, 21 cases, 18 deaths
Chile: Antofagasta, July 19-26 3 cases; Iquique, July 23-29, 3 cases, 3 deaths
China Amoy, July 21 epidemic; Hongkong, July 19-25, 17 cases 14 deaths
Indo China. Cholen July 12-25, 19 cases, 19 deaths, Saigon, July 18-25, 1 case, 1 death
Ecuador: Guayaquil, July 25-Aug 1, 2 deaths
India General July 21-Aug 6, 621 cases 461 deaths; Bombay, July 29-Aug 4 31 deaths, Calcutta July 19-25, 22 deaths; Rangoon, July 21-27, 32 deaths; Formosa, July 26-Aug 1, 1 case, 1 death
Peru General, July 21-Aug 3, 10 cases 21 deaths
Siam Bangkok, July 14-20, 3 cases
Venezuela La Guaira, Aug 5, present

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

NEW YORK State Board of Medical Examiners, Albany, September 22-25 Chief of Examinations Division, Charles F. Wheelock Albany

GEORGIA Homeopathic Board of Medical Examiners, 153 Whitehall street, Atlanta, October 1 Secretary, Dr R E Hinman, 155 Whitehall street, Atlanta

LOUISIANA State Board of Medical Examiners, New Orleans October 1-2 Secretary, Dr Felix A Larue, 211 Camp street, New Orleans

RHODE ISLAND State Board of Health, State House, Providence, October 1-2 Secretary, Dr Gardner T Swarts, 315 State House, Providence

ARIZONA Board of Medical Examiners, Phoenix, October 5-6 Secretary Dr Ancil Martin Phoenix

UTAH State Board of Medical Examiners, Salt Lake City, October 5-6 Secretary, Dr R W Fisher, Salt Lake City

IDAHO State Board of Medical Examiners Boise, October 6 Secretary, Dr W F Howard Pocatello

MONTANA State Board of Medical Examiners, Senate Chamber the Capitol, Helena, October 6 Secretary, Dr. W. C. Riddell Helena

COLORADO State Board of Medical Examiners, State Capitol Denver, October 6 Secretary, Dr S D VanMeter, 1723 Tremont Place, Denver

NORTH DAKOTA State Board of Medical Examiners, Grand Forks October 6-8 Secretary, Dr H M Wheeler, Grand Forks

MINNESOTA State Board of Medical Examiners, the Old Capitol St Paul, October 6-9 Secretary, Dr W. S Fullerton, 214 American National Bank Bldg, St Paul

NEW MEXICO Board of Health and Medical Examiners, Santa Fe, October 12-13 Secretary, Dr J. A Massie, Santa Fe

ARKANSAS Regular Board of Medical Examiners, Little Rock, October 13 Secretary, Dr F T Murphy, Brinkley

ARKANSAS Homeopathic Board of Medical Examiners, Little Rock October 13 Secretary, Dr P C Williams, Texarkana

GEORGIA Regular Board of Medical Examiners, Capitol Building, Atlanta, October 13 Secretary Dr. E R Anthony, Griffin

MISSISSIPPI State Board of Health, The Capitol Jackson, October 13 Secretary, Dr S H McLean, Jackson

KANSAS State Board of Medical Registration and Examination Topeka, October 13-15 Secretary, Dr R A Light, Chanute

MICHIGAN State Board of Registration in Medicine Lansing October 13-15 Secretary, Dr B D Harison, 504 Washington Arcade, Detroit

WYOMING Board of Medical Examiners October 14-16, Secretary, Dr S B Miller, Laramie

NEW JERSEY State Board of Medical Examiners State House Trenton October 20-21 Secretary, Dr J W Bennett, Long Branch

INDIANA Board of Medical Registration and Examination, Room 120 State House, Indianapolis October 27 Secretary, Dr W. T Gott, Room 120, State House, Indianapolis

Maryland Homeopathic June Report.

Dr Joseph S Garrison, secretary of the Board of Medical Examiners representing the Maryland State Homeopathic Medical Society, reports the oral and written examination held at Baltimore, June 16-17, 1908. The number of subjects examined in was 9; total number of questions asked, 70; percentage required to pass, 75 The total number of candidates examined was 21, of whom 15 passed and 6 failed. The following colleges were represented:

College	Year Grad	Per Cent
PASSED		
Maryland Med Coll	(1905)	77 5
Atlantic Med Coll Baltimore (1908) 75 1, 75 1, 75 2 75 5, 75 7, 78 1, 78 2, 78 2, 81 3 83 84 3 87 4 87 2		
Hahnemann Med Coll, Philadelphia	(1893)*	
FAILED		
Atlantic Med Coll., Baltimore, (1908) 54 6, 64 6 64 6, 66 1, 72 8, 74 4		

*Took special oral examination

Connecticut Eclectic July Report.

Dr. T S. Hodge, secretary of the Connecticut Eclectic Medical Examining Board, reports one reciprocal license issued July 14, 1908, through reciprocity with Ohio, to a graduate of the Eclectic Medical Institute of Cincinnati, 1906

Marriages

Harry C. Long, M.D., Cleveland, to Miss Lillian L. Susser of Buffalo, August 28.

J. G. Ormen, M.D., to Miss Miami Berthae Wagner, both of Baltimore, August 4.

Jessie W. Smith, M.D., and Frederick J. Trumper, both of Cleveland, August 25.

Jacob J. Singer, M.D., St. Louis, Mo., to Miss Flora Loewenstein of Chicago, recently.

Louis G. Rupp, M.D., Concord, Wis., to Miss Jessie Humphiey of Ixonia, Wis., August 26.

M. L. Webb, M.D., Fredericksburg, Va., to Miss Lula Dillon, at Fredericksburg, September 3.

Joseph Colt Bloodgood, M.D., Baltimore, to Miss Edith Holt of New York City, September 1.

Arthur Peake, M.D., to Frances M. Connell, M.D., both of Valley City, N. D., August 27.

Bert M. Brewster, M.D., Fieldon, Ill., to Miss Leila M. Chambers of Godfrey, Ill., August, 17.

George C. Smith, M.D., West Salem, Ohio, to Miss Leota Myrtle Cloes of New Sarum, Ont., July 29.

James Welch, M.D., Collins, Miss., to Miss Josie Hunter Weathersby of Clinton, Miss., September 3.

Clarence D. Ingraham, Jr., M.D., Baltimore, to Miss Aileen B. C. Dammann, at Baltimore, September 2.

Thomas A. Massey, M.D., Hampton, Va., to Miss Elizabeth Hardwick, at Elizabeth City, N. C., recently.

Charles Warren Herrington, M.D., to Miss Beulah A. Bents, both of Madison, Wis., September 9.

Alec Nicol Thompson, M.D., to Miss Margarite Corbett Scandlin, both of Brooklyn, N. Y., September 7.

J. Dilworth Stroud, M.D., to Miss Mae Virginia Saunders, both of Ocean View, Norfolk, Va., September 7.

Capt. William Wilkinson Reno, Medical Corps, U. S. Army, to Miss Ruth Steere of Manila, P. I., August 14.

Deaths

George Kinney Johnson, M.D. Cleveland University of Medicine and Surgery, 1846; a member of the American Medical Association; in 1859 mayor of Grand Rapids, Mich.; surgeon of the First Michigan Volunteer Cavalry, and later brigade surgeon and medical inspector of the Middle Military Department during and immediately after the Civil War; in 1879 president of the Michigan State Medical Society; a member of the National Association of Railway Surgeons; and surgeon-in-chief of the Grand Rapids & Indiana, Chicago & West Michigan, and Detroit, Lansing & Northern railroads; for several years president of the local board of U. S. pension examining surgeons; chief of staff and consulting surgeon to Butterworth Hospital died in his home in Grand Rapids, September 3, after an illness of one year, aged 86.

William T. Eckley, M.D. University of Iowa, College of Medicine, Iowa City, 1884; a member of the American Medical Association, Chicago Pathological Society and Chicago Medicolegal Society; formerly professor of anatomy in the medical and dental departments of the University of Illinois, Chicago Clinical School and Chicago School of Anatomy and Physiology; who retired from professional work about two years ago; died at his home near Grand Haven, Mich., September 12, from heart disease, aged 53.

Frederick Hubbard Hooper, M.D. College of Physicians and Surgeons in the City of New York, 1857; a member of the American Medical Association; surgeon to the House of Correction and attending surgeon at the Marine Hospital, New Bedford, Mass.; in 1863 surgeon of the board of enrollment for the First Congressional district; and in 1873 appointed visiting physician to St. Joseph's Hospital; died at his home in New Bedford, August 31, after an invalidism of several years, aged 78.

Josephus Henry Gunning, M.D. New York Homeopathic Medical College and Hospital, 1867; New York University Medical College, New York City, 1873; and later a lecturer in the latter institution; a member of the Medical Society of the State of New York; electrotherapeutist to the French Hospital, New York City; and president of the board of health of Scarsdale, N. Y.; died at his home in that place, August 29.

William Greer Armstrong, M.D. Medical Department of the Tulane University of Louisiana, New Orleans, 1891; a member of the American Medical Association; member of the Louisiana State Board of Health for two terms; and one of the most prominent young practitioners of Louisiana; died at his home in New Orleans, September 2, from pneumonia, after an illness of nine days, aged 38.

Staats Van Deursen Clark, M.D. College of Physicians and Surgeons in the City of New York, 1870; a member of the Medical Society of New Jersey; physician to Wells Memorial Hospital, New Brunswick, N. J.; for seven years city physician and a member of the board of freeholders; died at his home, September 6, from locomotor ataxia, after an illness of two years, aged 60.

Josiah Fisher Day, M.D. College of Physicians and Surgeons in the City of New York, 1856; surgeon of the Tenth and Twenty-ninth Maine Volunteer Infantry during the Civil War; for many years a member of the school board of Alford, Maine, and United States pension examining surgeon; died at his home in Everett, Mass., August 23, after a long illness, aged 75.

Ernest A. Crockett, M.D. Jefferson Medical College, Philadelphia, 1896; a member of the American Medical Association; ophthalmic surgeon on the staff of the Central Maine General Hospital; and a specialist on diseases of the eye, ear, nose and throat; died at his home in Lewiston, Maine, September 3, from typhoid fever, after an illness lasting two weeks, aged 37.

William Rosensohn, M.D. College of Physicians and Surgeons in the City of New York, 1900; a member of the American Medical Association; chief of the medical clinic of the Orange Memorial Hospital Dispensary; died recently at his home in East Orange, N. J., from pulmonary tuberculosis, after an illness of a year and a half, aged 30.

Robert M. Boyles, M.D. Western Reserve Medical College, Cleveland, Ohio, 1877; a veteran of the Civil War; at one time burgess of Reynoldsville and Falls Creek, Pa.; auditor and public school director of Du Bois, Pa.; died at the home of relatives in Reynoldsville, August 26, from septicemia, after an illness of four months, aged 68.

Lorenzo Hale, M.D. Albany (N. Y.) Medical College, 1868; a member of the Medical Society of the State of New York, and at one time its president; for several years editor-in-chief of the *Albany Medical Annals;* died at his home in Albany, August 31, from paralysis, after an illness of six weeks, aged 64.

Nicholas C. Sheppard, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1867; of Richmond, Va.; surgeon of Wood's Brigade, Stuart's Division, C. S. Army, during the Civil War; died in the Virginia Hospital, Richmond, September 3, after a lingering illness, aged 76.

Nathaniel James Mills, M.D. Jefferson Medical College, Philadelphia, 1855; surgeon in the Confederate service during the Civil War; postmaster of Corsicana, Texas, for one term; died at his home in that city, August 3, from senile debility, after an illness of about two years, aged 74.

William Y. Bliss, M.D. University of Vermont College of Medicine, Burlington, 1879; of Tully, N. Y.; twice coroner's physician of Onondaga County; died at the home of his brother in Burlington, Vt., September 5, from nephritis, after an illness of several years, aged 60.

Robert Henry Blaisdell, M.D. Indiana Eclectic Medical College, Indianapolis, 1885; a member of the American Medical Association; and secretary and director of the public schools of Sheridan, Mich.; died at his home, August 30, after an illness of some months, aged 58.

Moses E. Seale, M.D. Maryland Medical College, Baltimore, 1905; a member of the State Medical Association of Texas; formerly of Burlington; who recently moved to Lampasas; was shot and instantly killed in an affray at Burlington, August 31, aged 36.

U. LeRoy Washburn, M.D. Bellevue Hospital Medical College, New York City, 1890; for 30 years a practitioner of medicine; a member of the visiting staff of the Harlem Hospital; died at his home in New York City, September 23, after an illness of 20 weeks, aged 59.

Ezra H. Cummings, M.D. Baltimore Medical College, 1903; of Clarksburg, W. Va.; a member of the West Virginia State Medical Association; died in a hospital in that city, September 3, from typhoid fever, after an illness of three weeks, aged 34.

Louis McMurtry Coke, M.D. Hospital College of Medicine, Medical Department, Central University of Kentucky, Louisville, 1908; of Utica, Ky.; died in Alamagordo, N. M., June 6, from tuberculosis, after an illness of five months, aged 27.

Daniel J. Chittenden, M.D. New York University Medical College, New York City, 1859; formerly of Cameron Mills, N. Y.; a member of the Medical Society of the State of New York; died at home in Union, N. Y., September 4, aged 75.

Milton M. Hess, M.D. Central College of Physicians and Surgeons, Indianapolis, 1891; for many years a practitioner of Shelby County, Ind.; died at his home in Freeport, September 1, from cardiac dropsy, after a long illness, aged 70.

LeGrand D. Sherman, M.D. Castleton (Vt.) Medical College, 1854; died September 8, at his home in Tyro, Kan., from the effects of a gunshot wound of the head, said to have been self-inflicted with suicidal intent, aged 73.

Felix H. Coyle, M.D. College of Physicians and Surgeons, Baltimore, 1886; of New York City; died in Harlem Hospital, July 10, it is said, from the effects of prolonged exposure to the sun for the relief of rheumatism.

Millard Fillmore Warner, M.D. New York University Medical College, New York City, 1877; at one time a member of the state senate; died at his home in Cleveland, Ohio, August 29, after a short illness, aged 59.

Benjamin E. Shirk, M.D. Rush Medical College, Chicago; for nearly 40 years a practitioner of Marshalltown, Iowa; died at his home, January 18, from senile debility, after an illness of two weeks, aged 82.

Russell R. Smith, M.D. Cincinnati College of Medicine and Surgery, 1871; of East Liberty, Ohio; a member of the American Medical Association; died August 30, in a hospital in Columbus, aged 64.

B. Dorsey Winchester, M.D. University of Louisville, Medical Department, 1906; died suddenly near the home of his wife's parents, at Tompkinsville, Ky., September 6, from heart disease, aged 23.

Charles Leibecke, M.D. Germany, 1861; a veteran of the Civil War; and afterward United States gauger; died suddenly at his home in Aurora, Ind., May 15, from cerebral hemorrhage, aged 62.

Jason Lee Taylor, M.D. Southern Medical College, Atlanta, Ga., 1884; died at his home in St. Petersburg, Fla., May 29, from congestion of the liver, after an illness of eight days, aged 45.

Patrick Michael Bracelin, M.D. University of Iowa College of Medicine, Iowa City, 1875; died at his home in Davenport, Iowa, September 3, after an illness of eight months, aged 68.

A. U. Holland (Registration, Franklin County, Pa., 1881); for 40 years a practitioner of medicine at Fayetteville, Pa.; died at his home from hemiplegia, September 5, aged 77.

Charles C. Frost (Examination, Mass., 1894); for nearly 30 years a practitioner of Lowell, Mass.; died at his home, September 4, after an invalidism of several years, aged 90.

William D. Neel, M.D. University of Louisville (Ky.) Medical Department, 1879; of Chicago; died at a hotel in Gloucester, Mass., September 1, after a long illness, aged 58.

J. I. Baker, M.D. Cincinnati College of Medicine and Surgery, 1877; for 35 years a practitioner of Rock Creek, Ohio; died recently after an illness of two weeks, aged 81.

John J. Everhard, M.D. Rush Medical College, Chicago, 1857; of Seneca, Kan.; died at the home of his daughter in Duluth, Minn., August 30, from senile debility, aged 78.

LeGrand Wheeler (License, Mich., years of practice, 1900); for 50 years a resident of Muskegon, County, Mich.; died at his home in Wolf Lake, August 30, aged 76.

Jonathan Kemp Haynes, M.D. Albany (N. Y.) Medical College, 1858; for many years a practitioner of Hoosick, N. Y.; died in that place August 27, aged 84.

Maxey G. Lee, M.D. University of Maryland School of Medicine, Baltimore, 1888; died recently at his home in Hartsville, S. C., from cirrhosis of the liver.

Daniel T. Black, M.D. Physio-Medical College, Cincinnati, 1878; died at his home in Fort Jefferson, Ohio, September 1, after a long illness.

Henry A. Dawley, M.D. Detroit College of Medicine, 1892; of Lansing, Mich., formerly of Williamston, Mich.; died recently.

William B. Boyd, M.D. Atlanta (Ga.) Medical College, 1861; died suddenly at his home in Mineral; Va., June 15, aged 70.

Ethan Allen (License, Ind.); died recently at his home in Laporte, Ind., from uremia, aged 75.

Medicolegal

Testimony by Patient Not Waiver of Privilege.

The Supreme Court of Minnesota holds, in the personal injury case of Hillary vs. Minneapolis Street Railway Co., that, under the provisions of subdivision 4 of section 4660 of the Revised Laws of Minnesota of 1905, unless the privilege is waived, a physician can not testify as to any information acquired by him in attending his patient. The privilege is not waived by the mere fact that the patient testifies concerning his condition while receiving treatment.

Physician Declining to Testify as Expert on Insanity—Fees for Experts.

The Supreme Court of Missouri, Division No. 2, says, in the case of State vs. Bell, that, while non-expert witnesses may give their opinions as to the sanity or insanity of a person after stating the facts on which they predicate their opinions, it is conceded by all courts that an expert may give his opinion as to the sanity or insanity of a given person on a hypothetical statement of the facts; but the competency of the witness as an expert must be first satisfactorily shown to the court. It has sometimes been said that the opinion of the witness as to his own qualification is irrelevant and carries no weight with it, but the court takes it that this was said of witnesses who professed to be experts without any evidence that they had the qualifications as such. But when a witness declined, as a physician did here, to testify as an expert, and the only evidence tending to show that he was an expert on insanity was that he was a physician of some twenty-five years' practice, without any showing that he ever had any occasion to treat patients for insanity or had any experience in that particular branch of his profession, and he himself declined to testify as an expert, the court thinks that his answer to a hypothetical question should have been excluded on the ground that he had not been shown to be an expert and therefore was not competent to speak on that subject.

Another physician was asked in this case whether a certain incurable disease, after running six or eight months or a year, would cause paralysis. When this question was propounded to the witness, he answered that that was a specialized question, and he expected to receive remuneration if he was required to give expert testimony. The trial court sustained the witness in his refusal to answer until he had first received his fee for his opinion as an expert. But in so ruling the Supreme Court thinks that the lower court erred.

Whether a physician called to testify as an expert may be compelled to state his opinion on a hypothetical or other question involving his professional knowledge without compensation other than the witness fees allowed all other witnesses by law the Supreme Court says has been a much mooted question.

In Burnett vs. Freeman, 125 Mo. App., 683, the authorities on both sides of the proposition were carefully collated by Judge Ellison, and the conclusion was reached by the Court of Appeals that a witness called to testify as an expert, whether a physician or an expert in any other branch of knowledge, could be compelled to state his opinion on a hypothetical or other question involving his professional knowledge without further compensation than that allowed by law to other witnesses. Said the court: "It is the duty he owes to the state in aid of its orderly existence and in return for which he enjoys its protection and the administration of its laws in his behalf; not least of which would be the compulsion of other experts, whether they be the man who practices a profession, the artisan, the artist, the tradesman, or other person to come to his aid when needed in litigation in which he might unfortunately be involved." "It should be remembered that the duty the expert owes to the state, as a performance of citizenship, rather than a rendering of service to an individual, pertains to an obligation to give the court the benefit of the knowledge he has in store at the time he is called on He can not be required to especially fit himself for lines of inquiry He should not be expected to make examinations perform professional service, and the like for that is not the office of a witness He could not be compelled to do that any more than an ordinary person, with no knowledge of the facts pertaining to a case, should be required to go and post himself so as to become a witness"

After a full consideration of the various cases and the very satisfactory opinion of the Court of Appeals, the Supreme Court thinks that the Court of Appeals reached the proper conclusion on this question and supported it by satisfactory reasoning Ex parte Dement, 53 Ala, 389, Summers vs State, 5 Tex App, 377, State vs Teipner, 36 Minn 537

Liability of Osteopaths for Malpractice

The Kansas City Court of Appeals says that the case of Robertson vs Wenger and another was an action for malpractice The petition charged that the defendants held themselves out as healers of physical injuries ailments and diseases, their treatment being commonly known as that of osteopathy that at the date mentioned the defendants undertook to treat the plaintiff for injuries he had theretofore suffered by a fall, and that while so treating the plaintiff it was their duty to use reasonable care and skill that the defendants failed in their duty in that they negligently treated the plaintiff for a dislocation of the hip joint, when in fact no such dislocation existed and the defendants in treating the plaintiff for said supposed dislocation of the hip joint did so violently unskilfully and negligently manipulate handle and deal with the plaintiff's body that they fractured and broke the plaintiff's left femur or thigh bone in two places one place being at or near the juncture of the neck and shaft of the femur and the other in the shaft proper of the femur about three inches below the great trochanter, and that the defendants after breaking the femur did so negligently and unskilfully treat said fractured parts that they were viciously and faultily healed and joined together that is to say that they were not joined and united in apposition but were permitted to heal in a misshapen and malformed manner The answer of the defendants admitted that they were osteopathic physicians, but denied all the other allegations of the petition The evidence of the plaintiff tended to prove the allegations of his petition and that of the defendants to controvert that of the plaintiff

The error complained of on this appeal was the action of the trial court in giving in behalf of the defendants an instruction which was as follows The jury are instructed that in this case the defendants, Drs Wenger and Wood are not charged by the plaintiff with being unskilful or with a lack of professional skill and knowledge or as not being properly trained and qualified physicians, but that in the examination or diagnosis and treatment of plaintiff's injuries they (defendants) did not use ordinary skill but negligently and unskilfully treated plaintiff Hence if you believe and find from the evidence that in the examination and treatment of plaintiff's injuries defendants used such reasonable care and diligence as is customarily used by physicians of ordinary skill under similar circumstances, the plaintiff can not recover herein and your verdict must be for defendants" The objection to the instruction was that it removed from the consideration of the jury the question of the defendants unskilfulness and want of knowledge The contention of the defendants was that the question of the defendants' skill and knowledge was not made an issue by the pleadings

It is held that a petition charging a surgeon with malpractice which alleges that he undertook to reduce and set a bone and to attend, cure and heal the same and also alleges that he promised carefully and skilfully to perform said service but that he carelessly, negligently and unskilfully failed to set locate and reduce the dislocation and bind up dress and secure the same taken altogether does not set out an express promise to cure but only such an undertaking as the law implies which is to employ reasonable skill and diligence Vanhooser vs Berghoff 90 Mo 487 'In accepting a patient the physician says that he possesses and will exercise reasonable skill and judgment to discover the trouble of the patient and whether it is curable And 'if the failure of a physician to discover and cure the trouble of his patient is because the physician does not possess reasonable skill or because he does not exercise such skill, he is not entitled to any pay for his services" Logan vs Field, 192 Mo 54 The allegations of the petition that the defendants held themselves out to the world as healers of diseases and physical injuries and their undertaking to heal the plaintiff was sufficient to raise the implied obligation that they possessed the skill and knowledge necessary for the purpose The plaintiff's instruction No 1 seemed to comply with the plaintiff's theory of the case, and was a proper application of the law to the facts of the case, but it did not necessarily follow that the one given for the defendants was erroneous and misleading although the court told the jury that the defendants' skill and knowledge were not put in issue by the pleadings as the jury were at the same time told that the defendants' liability depended on the question of their exercise of reasonable care and skill in the treatment of the defendants' injuries When we say that a physician is obligated by his undertaking to use skill, it is necessarily and unavoidably implied that he must have such skill, otherwise he could not exercise it

This court was not in a position to know whether there was any evidence tending to show that the defendants did not possess the requisite professional skill and knowledge but that could make no difference, as proof of the failure to exercise such skill and knowledge to the satisfaction of the jury would have entitled the plaintiff to recover and if he failed to make such proof the inference would be that they possessed and exercised such skill and knowledge In other words the defendants could not have successfully controverted the plaintiff's evidence without having shown such to be the case.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below

Boston Medical and Surgical Journal

September 3

1 The Country Doctor's Relations with the Metropolitan Institutions and Specialists G Osgood Rockland Mass
2 *Study of One Hundred and Thirty six Cases of Diarrhea Occurring on the Boston Floating Hospital During the Summer of 1907 W P Lucas Boston
3 Deceptive Conditions in the Hip Joint R Hammond Providence R I
4 Erythema Multiforme with Visceral Lesions J N Hall, Denver

2 **Diarrhea on the Boston Floating Hospital**—Lucas selects for consideration 136 out of 147 cases of diarrhea occurring among 187 patients admitted to the Boston Floating Hospital between July 2 and Sept 14, 1907 The 136 cases were chosen as representing the severest type of uncomplicated summer diarrhea He describes the wards, the milk supply, the prominent symptoms of the conditions, and the general method of treatment, and cites a number of illustrative cases He concludes as follows

1 The best of our present methods of treatment in these cases is starvation carefully watched followed by any one of the weak mixtures low in fat
2 The guide to starting milk in any form is the general picture the child presents rather than the temperature or any one symptom
Saline infusion is one of the most valuable aids in carrying out the starvation treatment and supplying the liquid quotient
4 The benefit of colon irrigation is overestimated though useful in moderation once in twenty four hours being sufficient
5 Lavage is a very important factor when the infection has reached or attacked the stomach
6 Stimulation is of little value in extreme cases

New York Medical Journal

September 7

5 Cancer of the Rectum J P Tuttle New York
6 *Essentials of Voice Production G Hudson Makuen Philadelphia
7 *Tuberculin as an Adjunct to the *Home Treatment* of Pulmonary Tuberculosis J A Miller New York
8 Conjunctival Tuberculin Test G Mannheimer New York
9 Calmette Reaction as a Diagnostic Aid C P Oberndorf, New York
10 Tuberculo ophthalmic Reaction I L Christian Elmira N Y
11 Preliminary Report on the Effect of Repeated Injections of Tuberculin on Lymphatic Organs S G Dixon Harrisburg Pa

6. Voice Production.—Hudson-Makuen defines voice as a moving column of breath set in vibration by its own impact with the vocal cords and reinforced by its diffusion through the various resonance chambers into the surrounding atmosphere. The best methods of doing this he regards as the essentials of voice production. The methods differ slightly for speech and song. To the speaker the vocal effort is secondary to the articulatory effort; to the singer the vocal effort is paramount. The difference is most marked in the use of the larger muscles of respiration. In singing, the diaphragm is held in strong contraction during a greater period of time, and the respirations are more prolonged; while in speaking, the diaphragm and other muscles are constantly changing with the varying degrees of inflection, accentuation and emphasis. Speech, the author asserts, is something more than voice production: It is the product of the combined coordinate action of the two vocal mechanisms with a third, the articulatory mechanism, and complete harmony of action is necessary. He divides speech mechanisms into central and peripheral; the central being located in the brain and spinal cord. The cerebral centers are in the left hemisphere and he designates them as follows:

> The auditory center in which are stored memories for spoken words, the visual center, in which are stored memories for written and printed words; Broca's center, in which are stored memories for motor speech impulses; and the graphic center, in which are stored memories for the movements of the hand in writing.

Hudson Makuen discusses the development of speech in a child and states that the chief receptive avenue for speech is through the hearing, and that when the organs of hearing are defective speech will be correspondingly impaired. *No two individuals hear speech sounds exactly alike or develop* exactly the same kind of speech habits. An important period in the development of a child is when it commences voluntarily to use intelligent speech instead of the meaningless babble of the infant. The higher intellectual faculties begin to assume control, as it were. Defective speech, he believes, suggests defective mentality.

7. Tuberculin in Home Treatment of Tuberculosis.—Miller discusses the use of tuberculin as an adjunct to the home treatment of pulmonary tuberculosis, and reports the results in 94 cases. In the selection of cases, in no early or favorable cases in which sanitarium or other climatic treatment was possible were the patients kept in New York. With two exceptions no patients with fever were treated. Tuberculin treatment was urged only for patients who were not progressing favorably without it. As a result the patients treated have been long standing cases, gradually drifting into more or less chronic invalidism. Three preparations of tuberculin were used: 1, Koch's original tuberculin (O T); 2, bacillus emulsion (B E); 3, Denys' bouillon filtrate (B F). So far as possible, all constitutional reactions to the tuberculin were avoided and the so called clinical method of determining the proper dosage was employed and proved satisfactory. Miller reports the results in these cases in some detail and concludes practically as follows:

> Even four years' experience is hardly sufficient to warrant any absolute conclusions as to the therapeutic value of tuberculin. The results of any method of treatment in tuberculosis are influenced by innumerable factors which may very easily mislead the most conscientious observer. Statistics are probably of little real value under such circumstances, less so perhaps than the gradual accumulation of clinical impressions from continued study. As far as statistics go it would seem that any form of treatment must have considerable efficacy which is able to show the improvement in condition, with such a degree of permanency in such a class of cases, and under such conditions as are here reported. The series has included several patients in whom the results of the tuberculin appeared truly remarkable; in some others there has been distinct disappointment, especially in a few who seemed at first to do exceedingly well, and then relapsed later, a condition which is customary in tuberculosis, but which one would hope not to find when any degree of immunity had been established. It can not be too strongly emphasized that if good results are to be obtained by therapeutic use of tuberculin, the greatest patience and care must be exercised in every particular. The dilutions should be made only by some one who is skilled in such work. Any evidence of intolerance must be carefully noticed, and the progression of dosage correspondingly regulated; and lastly, and perhaps most important, the duration of treatment must be extended over a considerable time, preferably from six months to a year. The sum of impressions and results leads to the opinion that we have in tuberculin an active and useful aid in the treatment of pulmonary tuberculosis, which, while not truly specific, is probably a distinct step in that direction. We are, therefore, encouraged to continue its use in suitable cases, and shall do so until some better specific agent is available.

Medical Record, New York.

September 5

12 *Influence of Overweight and Underweight on Vitality. B. Symonds, New York.

13 Case of Congenital Umbilical Hernia. W. E. Magruder, Baltimore.

14 Case of Brain Tumor with Autopsy. M. J. Karpas, New York.

15 Obstruction of the Bowels, Simulating Appendicitis. J. McF. Gaston, Atlanta, Ga.

16 Sigmoiditis. M. L. Bodkin, Brooklyn, N. Y.

17 *Narcotic Method of Treating Morphinism. C. J. Douglas, Dorchester, Mass.

18 Effective Treatment of Membranous Colitis. D. Wark, New York.

19 Tube for Self Insufflation of Vapor into Middle Ear. P. R. Wood, Marshalltown, Ia.

12. Overweight and Underweight.—Symonds discusses overweight and underweight in relation to vitality, the causes of death in these cases, and the differences between the effect of overweight and of underweight. The effect of overweight is influenced by two fundamental factors: 1, the percentage of overweight; 2, age of the individual. The mortality increases markedly as the weight rises above 20 per cent. in excess, and to a still greater degree when the weight passes 30 per cent. in excess. This holds true for all types and all ages above 30 years. Beyond this period the mortality of overweights rises rapidly with the age and with the weight. In women the standard must be made a little higher than that of men, but with this allowance the effect of overweight among women is found to be just as bad as among men. As to underweight the effect is slight when the weight is not more than 20 per cent. below standard. The association of dyspepsia with underweight is a serious matter with those below 25 years of age, and has long been recognized as serious with a tuberculous family history especially in the younger individuals. In women an allowance has also to be made as in overweight. Discussing causes of death of those suffering from overweight and underweight, he states that overweights suffer more than underweights in the class of acute general diseases. Overweight seems to secure a marked degree of immunity from tuberculosis. Organic diseases of the heart show a decided excess among overweights and as great a deficiency among underweights. Diabetics are scarce among underweights, but numerous among overweights. Pneumonia is almost twice as fatal among underweights as among overweights. Bright's disease, both acute and chronic, is nearly twice as prevalent among overweights as in general experience. No overweight, whether man or woman, died of old age or senility according to Symonds' experience. He is convinced that the same percentage of overweights is more serious than if it were underweights, but in those below 25 years a moderate degree of overweight is more favorable than an underweight. The conditions are reversed above 30 years of age.

17. Narcotic Treatment of Morphinism.—Douglas holds that it is the pain and suffering caused by the withdrawal of morphin that is the main factor of difficulty in the treatment of morphinism. He considers the condition comparable to a surgical operation, and his plan is to abolish the pain caused by morphin withdrawal, on the same principle that surgical pain is abolished—that is, by keeping the patient either asleep or so thoroughly narcotized during the painful hours that follow complete withdrawal of morphin that he experiences no suffering. The abolition of pain is the kernel of the whole problem. Nearly every hypnotic or narcotic remedy in the materia medica may be required to meet individual cases. He warns, however, against relying exclusively on hyoscin, which is a very uncertain and often dangerous drug. Each morphin patient must be studied and treated individually. He believes all cases of cures supposed to have been effected by the sudden withdrawal of morphin without the aid of remedies to subdue the suffering, to be cases in which the patient has contrived to use morphin clandestinely.

American Journal of Physiology, Boston.

July.

20 *Influence of Internal Hemorrhage on Chemical Changes in the Organism, Especially Protein Catabolism. F. S. Weingarten and P. B. Crohn, New York.
21 Physiologic and Pharmacologic Studies of the Ureter. D. R. Lucas, New York.
22 Further Evidence of the Presence of Vasodilator Fibers to the Submaxillary Gland in the Cervical Sympathetic of the Cat. F. C. McLean, Chicago.
23 *Available Alkali in the Ash of Human and Cow's Milk in Its Relation to Infant Nutrition. J. H. Kastle, Washington, D. C.

20. **Hemorrhage.**—Weingarten and Crohn find no special changes in the digestion, assimilation, or metabolism, after hemorrhage artificially induced in healthy dogs. In a general way, the total excretions of nitrogen, sulphur and phosphorus were slightly increased after internal hemorrhages. The authors make the following practical application of their work: It would seem that with an organism in healthy condition a hemorrhage which did not endanger life, e. g., from 1 to 2 per cent. of body weight, would do little or no harm, especially if intraperitoneal. Repeated losses of blood would cause increasing damage, but relatively less if intra-abdominal instead of external. It is only after great cumulative losses or after an overwhelming single hemorrhage that the system does not recover promptly, if at all. In the case, then, of such losses of blood as occur from a ruptured ectopic pregnancy or ruptured spleen or liver, with the hemorrhage stopping without surgical interference, the blood, *per se*, may be not only devoid of harm, but of special use in the body. Such use would be influenced, however, by possible infections and adhesions. If surgical intervention were contemplated in such cases, the surgeon would have to consider these possibilities and the probable effects. With the patient placed so that the blood would gravitate toward the diaphragm, i. e., with feet raised, the blood would collect where absorption would be very rapid, where infection would best be met, and where, if adhesions should form, they would do a minimum of harm, i. e., between the subphrenic organs and away from the intestines and pelvic viscera. The more rapid the absorption, the less the likelihood of adhesions. The authors fully appreciate the fact, however, that observations of this kind pertaining primarily to the dog can not be applied automatically to man. Very thorough and very discriminating study of human beings must be conducted before such conclusions can be accepted for practical guidance.

23. **Alkali in Milk.**—Kastle finds that while cow's milk contains from 2.5 to 3.5 per cent. as much mineral matter as human milk, the ash of the two milks contains approximately the same amount of available alkali. The salient points of difference between the two kinds of milk seem to be: 1, Human milk contains relatively more of its mineral matter in utilizable form than cow's milk; 2, it can supply the organism of the child with relatively larger amounts of available alkali in proportion to the proteid than cow's milk; 3, it contains much less proteid; and 4, it contains a more readily absorbable variety of fat. An infant fed on cow's milk receives, therefore, an excessive amount of proteid, and the amount of alkali is insufficient for the proper digestion and metabolism of the proteid and fat. Acidosis arises from the excessive proteid metabolism and from the formation of acids from the fat and, if the fat is allowed to rise above 3.75 per cent., intestinal disturbances occur. There is excessive excretion of salts along with the products of proteid metabolism in the urine, and mineral matter is also withdrawn through the bowels in consequence of the difficult absorbability of the fats, so that the organism becomes progressively poorer in mineral matter. The utility of certain practices in infant feeding, such as the feeding of skimmed milk and buttermilk, the addition of alkaline substances to the milk, the use of sodium citrate and orange juice, is explained by these considerations. These methods either reduce the amount of fat or add mineral matter.

American Journal of Obstetrics, York, Pa.

August.

24 *Development of the Technic of Modern Gynecologic Operations. A. Martin, Berlin, Germany.
25 *Is Pubiotomy a Justifiable Operation? J. W. Williams, Baltimore.
26 *Choice Between the Intrapelvic and Abdominal Methods of Delivery in the Lesser (Non-Absolute) Degrees of Mechanical Obstruction. E. Reynolds, Boston.
27 *Pressure Conditions Within the Abdomen. R. R. Smith, Grand Rapids, Mich.
28 Foreign Bodies Left in the Abdominal Cavity After Operation. P. Findley, Omaha, Neb.
29 External Antepartum Examination. W. W. Reed, Boulder, Colo.
30 Interesting Obstetrical Cases. T. C. Smith, Washington, D. C.
31 Obstetrical Drawers. J. G. Drennan, St. Thomas, Ont.

24, 25, 26. Abstracted in The Journal, July 4, 1908, pages 70 and 71.

27. **Pressure Conditions Within the Abdomen.**—Smith asserts that investigation into the question of pressure conditions within the abdomen has not been so extensive as its importance demands. Though the subject seems to be of only theoretical interest to gynecologists and obstetricians it is necessary, in considering various abdominal and pelvic conditions, that our ideas concerning it should be clear—particularly in uterine displacements. He discusses the anatomy of the abdomen in relation to atmospheric and internal pressure, and goes into detail concerning the factors which raise or lower the atmospheric pressure within the abdominal cavity, illustrating his meaning by diagrams. He concludes by stating that atmospheric pressure within and without the abdomen is almost exactly balanced, variations at any point being caused by factors to be enumerated. There is no special universal positive pressure, which has so frequently been assumed. Physiologic increase or decrease of volume is attended by insignificant or no changes in pressure—the balance is practically maintained. A marked increase of volume from pathologic conditions often takes place without disturbing the balance; this varies in different individuals. Hydrostatic pressure at any point within the abdomen varies with the position of the body and the depth of superimposed organs. Negative pressure at the uppermost points is possible under certain conditions when the walls of such uppermost points are rigid. In the upper abdomen in the upright position a negative pressure may exist, which has more or less to do with the support of the viscera. Respiration causes small waves of pressure. Coughing, sneezing, defecation, labor and many movements of the body cause marked increase in intra-abdominal pressure by contraction of the muscles in the abdominal walls. Such pressure is transmitted in all directions and without diminution to every part of the contents and interior of the abdomen. These facts, he declares, should be applied to the problems of gynecology and obstetrics with greater accuracy than in the past.

Annals of Surgery, Philadelphia.

August.

32 Tetany Following Thyroidectomy Cured by Subcutaneous Injection of Parathyroid Emulsion. J. H. Branham, Baltimore.
33 *Sinus of First Branchial Cleft. C. P. Flint, New York.
34 Technic of Early Operation for Removal of Tuberculous Cervical Lymph Nodes. C. N. Dowd, New York.
35 Desmoid Tumors of the Abdominal Wall. H. B. Stone, Charlottesville, Va.
36 Syphilis of the Liver. A. MacLaren, St. Paul, Minn.
37 Primary Carcinoma of the Appendix. L. J. Hammond, Philadelphia.
38 Hernia of the Appendix, Complicated with Appendicitis. D. W. Bashan, Wichita, Kan.
39 Enormous Endotheliomatous Cyst of the Great Omentum. E. M. Hasbrouck, Washington, D. C.
40 *Inconsistencies of the Gauze Pack. H. A. Royster, Raleigh, N. C.
41 Prevesical Abscess. E. H. Eising, New York.
42 *Symptomless Hematuria. F. R. Hagner, Washington, D. C.
43 *Cystic Degeneration of the Kidney. C. M. Nicholson, St. Louis.
44 Venous Thrombosis and Hydrocele of the Inguinal Canal. J. Ransohoff, Cincinnati, Ohio.
45 Comparative Value of Various Measures for Relief of Prostatic Enlargement. A. Schachner, Louisville, Ky.

46 Surgery of the Prostate. S. Alexander, New York.
47 *Musculospiral (Radial) Paralysis Due to Dislocations of the Head of the Radius. D. Stetten, New York.
48 Congenital Defect in the Ulna. F. D. Patterson, Philadelphia.
49 Surgical Treatment of Bunyon. C. H. Mayo, Rochester, Minn.
50 New Motor for Bone Surgery. W. S. Bryant, New York.

33. **Sinus of First Branchial Cleft.**—Flint reports an interesting case of this rare condition, showing that lateral fistula in the neck, of congenital origin, does not always originate in the second branchial cleft. The points of particular interest in the case are: First, lateral sinus of the neck from the first cleft; second, presence of thyroid tissue; third, the relation to the structures of the second arch, the sinus being behind and underneath the upper portion of the sternomastoid muscle.

40. *Abstracted in* THE JOURNAL, *Jan. 25, 1908, p. 311.*

42. **Hematuria.**—Hagner reports three cases of symptomless hematuria in which hemorrhage ceased after catheterization of the ureters. The patients were males, aged 45, 53 and 56 respectively; two appeared slightly anemic. In all three patients the blood came from the right ureter, and in all the ureteral catheter was passed without meeting with any obstruction. In the article Hagner offers no explanation of the condition.

43. **Cystic Degeneration of Kidney.**—Nicholson reports a case, discusses the nature of the condition, and arrives at the following conclusions: 1. In the cells lining the cysts, the entire row are alike, and apparently in the same stage of secretion, that is, the nuclei are poor in chromatin and show a vesicular condition. In the normal convoluted tubules this condition is present in a few cells only, while many are rich in chromatin and show filaments or striations known as "ergastoplasm." This condition of the normal convoluted tubules is met with in active secreting cells. While the condition of the cells lining the cyst would correspond to a stage in secreting activity, it is not probable that the entire row lining the cyst would show the same stage in secretion because we have no proof that secretion occurs in cells simultaneously. Therefore, in his opinion, the cells lining the cysts are less active in secreting power than normal epithelium. 2. The various theories of the origin of cystic kidneys have been discussed previously in this article. From the study of the microscopic sections he finds that the smallest cysts are lined with the same epithelium as that lining the convoluted tubules. Therefore, one must conclude that the cysts originate in the convoluted tubules by dilatation and proliferation of lining epithelium. In the case reported he states that the cysts did not arise in the glomeruli, the blood vessels, or the connective tissue.

47. **Musculospiral Paralysis.**—Stetten discusses musculospiral paralysis, especially that form due to dislocation of the head of the radius, which he asserts is a distinct type of nerve injury, and quite as definite and characteristic as any other form of injury to this nerve. He states that in every case of anterior dislocation of the head of the radius the two divisions of the musculospiral nerve are in danger, and it is a fortunate accident if they escape. In actual occurrence this injury is rare, but compared to the frequency of joint injury itself, it is not unusual. It is most likely to occur when the dislocation accompanies ulnar fracture and when the direction of the dislocation is forward and slightly outward. The nerve is almost invariably injured below its point of division into the posterior interosseus and radial nerves; one or both branches may be caught by the dislocated head of the bone. The symptoms are practically those of the typical musculospiral paralysis, and may vary greatly in degree or extent, depending on whether one or both nerves be injured, and how badly. The prognosis, Stetten says, is good under appropriate treatment, which is practically the same as that for dislocation, simple reduction, if possible, and generally resection of the head of the radius in old cases, with nerve suture if necessary. Should the nerve be uninjured in a dislocation of the radial head, Stetten warns that its proximity to the bone should be borne in mind when the reduction is done, and care should be exercised not to injure the nerve by pressure, hyperextension, or careless operative technic.

Southern Medical Journal, Nashville, Tenn.

August.

51 Hernia into the Duodenojejunal Fossa with Report of a Case Causing Complete Obstruction. J. A. Crisler, Memphis.
52 Recent Advances in the Technic of Thoracotomy and Pericardiotomy for Wounds of the Heart. R. Matas, New Orleans.
53 A Medicolegal Case, Involving X-Ray Testimony and Its Bearing on a Recent Proposal to Regulate Medical Expert Testimony. E. R. Corson, Savannah, Ga.
54 What We Should Know About Malarial Disease. W. Krauss, Memphis, Tenn
55 Removal of the Third and Faucial Tonsils. H. Wood, Nashville, Tenn
56 Treatment of Pelvic Inflammatory Disease. G. R. Holden, Jacksonville, Fla.
57 **Neurasthenia.* *C. M. Nice, Birmingham, Ala.*
58 Jaundice and Its Significance. S. Harris, Mobile, Ala.

57. **Neurasthenia.**—Nice states that whatever the direct causes may be, the indirect can best be classified as hereditary and acquired. The principal acquired causes are overwork, worry and mental strain. Among the predisposed, ambition, financial trouble, love and bereavements are strong factors. Infectious and chronic diseases are occasional causes, and of these influenza with its long period of convalescence is the most common. Gross structural changes are also causative factors, as, for instance, carcinoma, ulcer and visceral displacements, abdominal or pelvic. Under certain conditions, trauma, poor hygiene, effort to live up to false ideals, and higher education may be causes. In considering the symptoms, he states that in early life the preliminary picture of neurasthenia is often seen in an easily excited, irritable spoiled child. Sometimes a feeble child has been over-indulged by its parents, and as a result is led to attach too much importance to all personal feelings and grows up to adult life under adverse influences and nervous surroundings. For a time there may be a cessation of nerve explosions and all may go well until, years later, under stress of overstudy, overwork, or illness the patient presents the typical picture of neurasthenia. The individual may be moody and irritable or good natured, but invariably concentrates the mind on the real or fancied bodily ailments. In the cerebral form, loss of memory is a common symptom and insomnia is almost always present. Vertigo and dizziness are usually common and the face frequently flushes. The cerebral vessels often seem to fill to the point of bursting and the patient must fan to get breath. Headache is often intense and there is a sensation of constriction around or of pressure within the head. These symptoms may vary in severity; they may be referred also to the organs of special sense. In spinal neurasthenia the symptoms are of a paretic and irritative character, the most frequent complaint being of weakness and weariness of the back. Nice refers to Kelly's statement that backaches are more frequently due to neurasthenia than to pelvic or kidney diseases. The condition may grow into a real motor deficiency and the patient may become practically bedridden. There may be disturbances of coördination and the reflexes may be exaggerated. The gastric type is common and is known by such names as nervous dyspepsia, gastrosis, and neurasthenia-gastrica (Ewald), and the symptoms are familiar to every practitioner. The symptoms of the sexual form are also well known.

In the cardiovascular group the symptoms are most distressing as the patient has a sensation of suffocation and impending death, which is especially hard to overcome. This condition is frequently associated with the gastric form. Nice emphasizes the importance of careful physical examination, and declares that the disease should not be diagnosed by exclusion as is so often done. He believes that prophylactic treatment should be commenced before birth and continued throughout life. The treatment, he says, combines all the methods included in the definition of therapeutics, with drugs last and to be considered least. There is no specific treatment and the individual patient must be carefully studied as each case is a law unto itself. He emphasizes the importance of hygiene and cheerful surroundings, and simple, wholesome diet. A daily program should be outlined and the patient compelled to carry it out. Drugs may be necessary at first for the headaches, insomnia and constipation, and electricity may be useful. He refers to the value of psychotherapy in the hands of an experienced clinician. Marriages among neurotics should be discouraged.

Old Dominion Journal of Medicine and Surgery, Richmond, Va.

August

59 *Difficulties and Dangers in Surgical Operations on the Biliary Tract. M. H. Richardson, Boston.
60 Psychotherapy. H. W. Cook, Minneapolis.
61 Case of Acute Fibrinous Bronchitis. D. D. Talley, Richmond, Va.
62 Migraine. H. H. Levy, Richmond, Va.
63 *Headache of Intracranial Disease. W. B. Cornell, Baltimore.
64 Eyestrain as a Cause of Headache. H. O. Reik, Baltimore.
65 Headaches of Renal Disease. M. M. Pearson, Bristol, Va.
66 Headaches Due to Toxemic Conditions. C. J. Andrews, Norfolk, Va.
67 Headaches Due to Nasal Sinus Infections. B. R. Kennon, Norfolk, Va.

59. **Difficulties and Dangers of Biliary Surgery.**—Richardson states that he has no means of knowing just what impression the medical profession as a whole has formed of gall bladder surgery except that many men undertake it without adequate training. Many beginners in surgery, seeing the ease with which skilled operators perform difficult operations on the biliary tract, attempt to perform similar operations though in many cases they are unaware of the obstacles which may arise in complicated cases or the dependence of speed and ease of operating on years of painful repetition. He asserts that it is a fault of writers and teachers of the present to omit vivid portrayal of the errors and disasters of surgery, and calls attention to the fact that medical journals are filled with reports of successful cases as if defeats and poor results were unknown. Gall bladder surgery demands special knowledge and experience, and the first and most indispensable bit of knowledge is that lesions of the biliary tract can not be either diagnosticated or prognosticated in their fullest extent. He enumerates conditions which may simulate the picture of gallstone disease and declares that no man should prepare to operate on gallstones unless he realizes that his diagnosis may be wrong and is prepared to operate on whatever condition is found when the abdomen is opened. Nothing seems easier and safer than removal of a gallstone or two from the gall bladder after, say, a hysterectomy when an experienced hand has located them. But even the simplest gall bladder operation has dangers which far exceed those based on the operator's experience if that is meager. And the case that is easiest, least complicated and, perhaps, most important may be the very one to go wrong. Patients die after the simplest cholecystostomies; the outcome in cholecystectomies can never be foretold, even in the most ordinary cases; choledochotomies imperil life. In making a diagnosis the history is important, but the physician must be able to "size up" the patient more or less accurately, and must also be able to judge whether pain is severe or trivial, feigned or real. Richardson describes in some detail the difficulties attending the location of stones, including some personal experiences. Some of the methods of treating the gall bladder Richardson believes to be dangerous. Drainage through the cystic duct, he states, is unsatisfactory and hazardous; he prefers excising the gall bladder with the diseased portion of the duct. He discusses the danger of hemorrhage, and states that a danger seldom referred to is that of tying the hepatic duct or common duct with the cystic. Among the dangers liable to be encountered in the after-treatment he enumerates hemorrhage, the burrowing of bile and deep local sepsis with occasionally peritonitis—all dependent on or influenced by drainage and its management. Illustrative cases are cited.

63. **Headache of Intracranial Origin.**—Cornell states that headache may be due to either functional or organic intracranial disease. To the former group belong neurasthenia, psychasthenia and hysteria, the so-called psychoneuroses. In these conditions the headache may assume any form but is seldom acute. In neurasthenia and psychasthenia the pain is often indefinite in character, usually dull but constant and frequently combined with various cephalic paresthesias. In hysteria, on the other hand, the pain may be severe, boring, gnawing and narrowly localized. Whatever the form it never resembles the pain of neuralgia or migraine, nor does it definitely correspond to certain nerve distribution. In regard to headache due to organic causes, he states that this form stands out in sharp contrast to other types so far as severity is concerned. He discusses the various lesions which may cause this form of headache. In syphilis the most violent forms occur when the meninges are involved. The pain is worst at night, when it may become paroxysmal. Syphilitic endarteritis in itself may cause pain. The differential diagnosis of intracranial disease frequently presents great difficulty. The treatment of the headache of organic origin is largely that of the cause. Practically all varieties due to intracranial disease are made worse by mental effort, emotion, taking food and the imbibition of alcohol. The treatment of headaches of the functional group furnishes opportunity for the exercise of therapeutic skill. Many patients are over-drugged and would do better on a placebo, while psychotherapy will effect a cure in many instances. Much depends on the proper handling of the case in a general way without paying too much attention to the headache itself.

Interstate Medical Journal, St. Louis

August

68 *Foreign Bodies in the Abdominal Cavity. H. S. Crossen, St. Louis.
69 Examinations of the Feces as a Routine Procedure. J. S. Myer, St. Louis.
70 *Progressive Hemiplegia of the Left Side Due to Gliosis and Vascular Lesions of the Right Cerebrum. F. R. Fry and M. B. Clopton, St. Louis.
71 *Dermatitis Following Use of Walnut Juice Hair Dye. W. A. Hardaway, St. Louis.
72 Bichat: His Life, Researches and Character. A. C. Eycleshymer, St. Louis.

68. **Foreign Bodies in Abdominal Cavity.**—Crossen discusses the leaving of foreign bodies in the abdomen after laparotomy, and deals with sponges and instruments separately. Sponges and pads he considers under the heads of how the accident occurs, its consequences, and how it may be made impossible. In regard to the last point he refers to the method of using no detached pads or sponges, either large or small, but one continuous piece, as described in detail in the *Interstate Medical Journal*, September, 1907 (abstracted in THE JOURNAL, Oct. 26, 1907, p. 1474). He particularly cautions against cutting a gauze strip sponge in the course of operation. He has now given this method a year and a half's routine trial with complete satisfaction. All reliance on counting tapes or tags, etc., is avoided. He discusses the width of the strips, the cost, and gives detailed instructions for nurses how to prepare the strips for operation. He concludes with medicolegal considerations, detailing the famous suit against Professor Kosinski in 1897.

70. **Progressive Hemiplegia.**—Fry and Clopton report a case of progressive left hemiplegia due to gliosis and vascular lesions of the right cerebrum. Operation was discouraged by the authors as it was felt to offer but slight chance of benefit, but was performed at the desire of the relatives. Death ensued twenty-four hours later without any improvement in the hemiplegia. The pathologic findings are reported and the authors consider that this case well illustrates the fact that marked subjective sensory phenomena, i. e., paresthesias of various descriptions, often appear in the absence of objective sensory signs. The subjective often antedate for a long (?) time the appearance of the objective signs in the same areas or territories. They have observed this fact, i. e., the later appearance of the objective signs in lesions of the brain, of the cord and of the peripheral nerves, and have referred to it in previous papers.

71. **Dermatitis from Walnut Juice.**—Hardaway calls attention to the fact that he has encountered many cases of dermatitis consequent on the use of walnut juice as a hair dye. Sometimes the preparation is home made, sometimes bought from an apothecary. The amount of inflammatory reaction varies in different persons. Sometimes the attack is acute, involves the face, neck and ears, and presents such an amount of accompanying edema that the eyes are closed and the features unrecognizable. The subjective symptoms are burning and prickling sensations and intolerable tension. In some persons the condition is merely one of subacute inflammation renewed from time to time by the reapplication of the dye, and limited to the ears and the skin at the margin of the scalp

In persons of an "eczematous habit," the dye has apparently evoked a veritable eczema, which has extended to the arms and trunk. The hairy scalp itself is not particularly involved, since, as is well known, this region is naturally very insensitive.

Illinois Medical Journal, Springfield.

August.

73 *Arteriosclerosis. T. J. Pitner, Jacksonville.
74 *Some Points Concerning the Treatment of Diabetes Mellitus, with Special Reference to the Oatmeal Diet. J. B. Herrick, Chicago.
75 *Baths and Exercises in Treatment of Heart Disease. R. H. Babcock, Chicago.
76 *Principles of Treatment in Cardiovascular Conditions. J. L. Miller, Chicago.
77 Energy Value of Foods. W. S. Hall, Chicago.
78 Etiology and Pathology of Multiple Sclerosis, with Report of Two Cases with Autopsy. P. Bassoe, Chicago.
79 Signs and Symptoms of Multiple Sclerosis. W. Healy, Chicago.
80 Eye Manifestations of Disseminated Sclerosis. H. Gradle, Chicago.
81 *Diagnosis of Insular Sclerosis. S. Brown, Chicago.
82 Course, Prognosis and Treatment of Multiple Sclerosis G. W. Hall, Chicago.
83 Commoner Forms of Eyeball Injuries. F. Allport, Chicago.
84 *Public Health Laws in Illinois. H. B. Hemmenway, Evanston, Ill.

73, 74, 76. Abstracted in THE JOURNAL, June 6, 1908, pp. 1931, 1932.

75. Abstracted in THE JOURNAL, June 13, 1908, p. 2016.

81. **Insular Sclerosis.**—Brown discusses the diagnosis in the early stages from hysteria, brain tumor and tabes, and considers it advantageous to divide cases according to their mode of onset, as follows:

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147 Ocular Tuberculin Test of Calmette. N. Bannister, Ottumwa.
148 Medical Aspect of the Duodenum. E. Grimes, Des Moines.
149 Surgical Aspects of the Duodenum. W. Jepson, Sioux City. S. D
150 Tuberculous Meningitis. G. S. Browning, Sioux City.

Colorado Medicine, Denver.

August.

151 Cleft Palate. T. E. Carmody, Denver.
152 Ocular Tuberculosis. E. Jackson, Denver.
153 Extrauterine Pregnancy. F. N. Cochems, Salida.
154 Infection of the Fallopian Tubes. J. W. Rambo, Portland, Colo,
155 Sudden Death During Pregnancy or Puerperium. C. H. McClanahan, Colorado Springs.
156 Case of Fracture at the Base of the Skull with Prolonged Unconsciousness—Recovery. W. J. LeRossignol, Rifle.
157 Laryngeal Tuberculosis. E. W. Fox, Trinidad.

Albany Medical Annals, Albany.

August.

158 The Inherent Spirit of Medicine. A. S. M. Chisholm, Bennington, Vt.
159 Chronic Alcoholism. E. M. Somers, Ogdensburg, N. Y.
160 Importance of Making the Patient Cough During Auscultation of the Lungs. A. T. Laird, Albany, N. Y.
161 The Guest, or Personal Experience of a Patient in a Hospital for Insane. Told by Herself.

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Illinois Medical Journal, Springfield.

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73 *Arteriosclerosis. T. J. Pitner, Jacksonville.
74 *Some Points Concerning the Treatment of Diabetes Mellitus, with Special Reference to the Oatmeal Diet. J. B. Herrick, Chicago.
75 *Baths and Exercises in Treatment of Heart Disease. R. H. Babcock, Chicago.
76 *Principles of Treatment in Cardiovascular Conditions. J. L. Miller, Chicago.
77 Energy Value of Foods. W. S. Hall, Chicago.
78 Etiology and Pathology of Multiple Sclerosis, with Report of Two Cases with Autopsy. P. Bassoe, Chicago.
79 Signs and Symptoms of Multiple Sclerosis. W. Healy, Chicago.
80 Eye Manifestations of Disseminated Sclerosis. H. Gradle, Chicago.
81 *Diagnosis of Insular Sclerosis. S. Brown, Chicago.
82 *Course, Prognosis and Treatment of Multiple Sclerosis* G. W. Hall, Chicago.
83 Commoner Forms of Eyeball Injuries. F. Allport, Chicago
84 *Public Health Laws in Illinois. H. B. Hemmenway, Evanston, Ill.

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147 Ocular Tuberculin Test of Calmette. N. Bannister, Ottumwa
148 Medical Aspect of the Duodenum E. Grimes, Des Moines
149 Surgical Aspects of the Duodenum. W. Jepson, Sioux City, S. D.
150 Tuberculous Meningitis. G. S. Browning, Sioux City.

Colorado Medicine, Denver.

August.

151 Cleft Palate. T. E. Carmody, Denver.
152 Ocular Tuberculosis E. Jackson, Denver
153 Extrauterine Pregnancy F. N. Cochems, Salida.
154 Infection of the Fallopian Tubes. J. W. Rambo, Portland, Colo,
155 Sudden Death During Pregnancy or Puerperium C. H. McClanahan, Colorado Springs
156 Case of Fracture at the Base of the Skull with Prolonged Unconsciousness—Recovery. W. J. LeRossignol, Rifle.
157 Laryngeal Tuberculosis E. W. Fox, Trinidad.

Albany Medical Annals, Albany.

August

158 The Inherent Spirit of Medicine A. S. M. Chisholm, Bennington, Vt
159 Chronic Alcoholism. E. M. Somers, Ogdensburg N. Y.
160 Importance of Making the Patient Cough During Auscultation of the Lungs A. T. Laird, Albany, N. Y.
161 The Guest, or Personal Experience of a Patient in a Hospital for Insane Told by Herself.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below Clinical lectures single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest

The Lancet, London.

August 22

1 *Granular Kidney W B Warrington
2 Gigantic Retroperitoneal Tumor, Intimately Connected with the Kidney, which Simulated Ascites from Tuberculous Peritonitis C A Morton
3 Alleged Discovery of Syphilis in Prehistoric Egyptians G. E. Smith
4 Digest of Eighty six Cases of Epidemic Cerebrospinal Meningitis in Motherwell in 1907 E Watt
5 Thirty five Consecutive Cases of Extrauterine Pregnancy Dealt With by Abdominal Section Without a Death J Oliver
6 Generalized Edema of the Fetus W W King
7 Case of Double Abdominal Hydrocele. O Richards
8 Case of Congenital Hypertrophic Stenosis of the Pylorus Treated Medically N B Clowes.

1. **Granular Kidney.**—Warrington states that the cardinal symptoms on which a diagnosis of granular kidney is based are 1, cardiovascular changes; 2, eye changes; 3, manifestations of chronic or acute renal toxemia, and 4, the condition of the urine He discusses these at some length and asserts that the cardiovascular changes are of primary importance Ophthalmoscopic examination will often make a diagnosis possible in obscure cases A few points must be remembered: 1 None of the appearances, except the arterial changes, are absolutely distinctive of renal disease, but in rare cases may be exactly simulated by, say, the changes in cerebral tumor. 2 The most characteristic feature is the appearance of small glistening, woolly whitish patches often arranged in a striate fashion round the macular region. These are degenerative in nature, are permanent, and may require careful searching for with a dilated pupil, and the direct method. 3. Other changes are larger white patches, irregularly distributed on either side of the disc, probably exudations Hemorrhages and papillitis are not uncommon All these may disappear. 4. They may occur at any age 5 The prognostic significance of the degenerative patches is grave So protean are the manifestations of granular kidney, he declares, that the examination of the eye may be the one thing which will make a puzzling case clear, and, as in the optic neuritis of cerebral disease, vision may be not at all, or only slightly affected The more chronic states of toxemia may lead to errors in diagnosis. The anemia, wasting and cachexia of advanced granular kidney must be borne in mind

From the point of treatment there are several groups of cases 1, the compensated kidney in which the excretion of urinary products is not greatly interfered with; 2, the acute exacerbations in which the treatment resembles that of acute nephritis; 3, the cases of cardiac failure; 4, the more chronic symptoms of renal toxemia; 5, the hopeless cases in which the desires and tastes of the patient should be catered to so far as possible. In the compensated cases the treatment should be chiefly prophylactic Alcohol is undesirable; condiments are likely to be harmful, and the heart is especially sensitive to tea and coffee stimulation According to von Noorden, quoted by Warrington, the average daily nitrogen should not fall below 12 grams, which requires about 85 grams of proteid Physical treatment is important and a warm, dry climate is beneficial Cardiac symptoms must be treated as they arise For high tension Warrington advises baths and free action of the bowels For more urgent symptoms sodium nitrite and nitroglycerin are useful. Cardiac failure must be treated in the usual way. When there are signs of renal toxemia, elimination by the bowels and skin must be promoted Warm baths or vapor baths frequently relieve toxemia and the intense and distressing headache Hot rectal injections of saline solution are recommended by some observers, while others advise administration of digitalis. Warrington thinks it advisable to give morphin in these cases; he considers it invaluable for relief of the painful, restless nights, especially when there is cardiac dyspnea. Chloral, he says, may be given by rectum Occasionally lumbar puncture is successful in cutting short the convulsions.

British Medical Journal, London.

August 22

9 Are Yeast Extracts Justifiable as Substitutes for Extract of Meat? A. Gamgee
10 Clinical Experiences with Spinal Analgesia. A. E Barker.
11 Some Lessons from Ancient Fractures F. W. Jones
12 Hyperpyrexia. J Smith
13 Antral Disease in Relation to Special and General Surgery. H Tilley and A S Underwood
14 Teething and Its Alleged Troubles L Guthrie, H. A T Fairbank and J. G Turner.
15 Acute Pyorrhea Alveolaris Treated by a Specific Vaccine K W. Goadby
16 *Mortality in Dusty Trades in Sheffield H. Scurfield
17 Etiology and Prevention of Pneumonokoniosis T. Oliver
18 Pathology of Grinders' Phthisis A E Barnes
19 Dust Removal in the Grinding Trades C. Johnston and S R Bennett.
20 Notification of Industrial Diseases. A Scott
21 Industrial Dermatitis F Shufflebotham
22 Tar and Asphalt Workers' Epithelioma and Chimney-Sweeps' Cancer. T Oliver
23 An International Committee on Industrial Disease. L Carozzi
24 Physiology of Purin Metabolism J B Leathes C. Watson E I. Spriggs, Sir L Brunton, T H Milroy and I. W. Hall
25 Influence of Oxygen Inhalations on Athletes L Hill.

16. **Mortality in Dusty Trades.**—Scurfield states that the dusty trades of Sheffield produce their chief effect by increasing the fatality of tuberculosis and other diseases of the respiratory tract. About 120 males die every year in Sheffield from tuberculosis, who would not die if the conditions for work in Sheffield were as good as in the rest of the country. The higher death rate is chiefly among males. In Sheffield the death rate of grinders from phthisis is more than six times and the death rate from other respiratory diseases nearly three times that of the average male; while the death rate of cutlers from phthisis is nearly three times and from other respiratory diseases nearly four times that of the average male Scurfield calls attention to the difference in the conditions in Sheffield and in Solingen, Germany, where similar trades are carried on.

Medical Press and Circular, London.

August 19

26 Dementia Præcox. J. Turner.
27 Diabetic Regimen A Jaquet
28 Bacterial Aspects of Cerebrospinal Fever. J A. Hislop
29 Physical Deterioration in Children J. J. Cox.
30 Oral Use of Serum. D M Paton

Clinical Journal, London.

August 12

31 Case of Homonymous Hemianopia with Unusual Sensory Symptoms H H Tooth

August 19

32 Puerperal Fever. V Bonney
33 Surgical Treatment of Imperfectly Descended Testicle E M Corner

Journal of Tropical Medicine and Hygiene, London.

August 1

34 Review of the Position of Gland Palpation in Diagnosis of Human Trypanosomiasis J L Todd
35 *Bacilli Carriers and Their Part in the Transmission of Infectious Diseases F. Vay

35. **Bacilli Carriers.**—Vay defines a bacillus carrier and the meaning of "convalescence." He then considers residual microbes, immunizing factors, and the carrying of diphtheria, typhoid, plague and cholera, the duration of convalescence and the special measures for each disease, and formulates the following conclusions:

1 The importance of bacteria carriers is not identical in all infectious diseases, their part should be examined for each disease separately.

2. Concerning plague, further investigations should be made

3 Epidemiologic facts render it likely that the importance of bacilli carriers is not very great in cholera; theoretical speculations lead to the same result

4 In practice it is preferable to direct attention to careful clinical medical examination and supervision

Annals of Tropical Medicine and Parasitology, London.

July

36 *A Peculiar Intralobular Cirrhosis of the Liver Produced by the Protozoal Parasite of Kala Azar L Rogers
37 *What is "*Schistosomum mansoni*" Sambon 1907? A Looss
38 *Prevention of Dengue Fever E H Ross
39 Life History of *Trypanosoma lewisi* J E Salvin Moore, A Breinl and E Hindle.
40 Effects of Therapeutic Agents on Trypanosomes in Respect to (a) Acquired Resistance of the Parasites to the Drug and (b) Changes in Virulence of the Strains After Escape from the Drug B Moore, M Nierenstein and J L Todd
41 *Observations on the Acidity and Alkalinity of the Blood in Trypanosome Infections M Nierenstein
42 *Contributions to the Morphology and Life History of *Piroplasma canis.* A Breinl and E Hindle

43 Comparative Chemotherapeutical Study of Atoxyl and Trypanocides. M. Nierenstein.
44 Three New Species of *Culex* Collected During the Antimalarial Campaign in Mauritius in 1908. D. E. de Charmoy.

36. **Kala-Azar.**—Rogers summarizes his remarks as follows:

1. The most chronic cases of kala-azar not infrequently terminate their course with ascites due to cirrhosis of the liver.
2. The cirrhosis is of a peculiar intralobular type of uniform distribution, the organ having a smooth surface.
3. It is due to the protozoal parasite of kala-azar, which may be found in the liver and other organs after death.
4. This form of cirrhosis of the liver is much commoner in Lower Bengal than a true malarial cirrhosis, with which it has probably hitherto been confused. It is, however, much less common than atrophic cirrhosis due to unknown causes.

37. **Schistosomum Mansoni.**—Looss examines in detail Sambon's discovery of a new species of blood fluke, *Schistosomum mansoni*, which Sambon stated had been hitherto confounded with *Sch. hæmatobium*. He summarizes his argument by stating that of the evidence brought forward by Dr. Sambon in order to justify the creation of *Sch. mansoni*, 1, the zoologic proof is absolutely insufficient; 2, the anatomo-pathologic proof does not stand any serious test, and 3, the geographical proof is based on a peculiarly one-sided interpretation of the literature. In all the evidence there is not the slightest detail which would really point to the existence of a distinct species in the West Indies and certain parts of Africa. It would be unwise on his part, Looss says, to go so far as to contend that such a species, or perhaps even several species, can not, altogether, exist. This is quite possible from the zoologic point of view; but, zoologically, there is no possible doubt, either that this species, or these species, must produce the same two shapes of eggs as does the *Sch. hæmatobium*, or else our present information is wholly incorrect. If, therefore, Dr. Sambon wishes to maintain that there is an independent *Sch. mansoni* in the countries above mentioned, the entire proof of its existence still remains to be given.

38. **Dengue.**—Ross points to the fact that with the extermination of mosquitoes in Port Said, not only has malaria disappeared, but dengue, which was formerly very prevalent, has disappeared also; and he thinks that the extermination of the domestic mosquito means the prevention of dengue.

41. **The Blood in Trypanosomiasis.**—Nierenstein reports his observations on the acidity and alkalinity of the blood in trypanosome infections, and concludes that: 1. It is evident, that in experimental trypanosomiasis infection (*T. brucei* and *T. equiperdum*) the acidity of the blood increases. 2. The increase of the acidity is probably due to the production of amido acids through, or by the trypanosomes, i. e., the acids might be either secreted by the parasites or produced by the action of the parasites on the proteins of the blood serum. In the latter case the amido acids would be broken up through hydrolysis from the proteins into simpler polipeptids. 3. It is possible that the increase of acidity might be of assistance in the diagnosis of a typical case of trypanosomiasis, in which the parasites have disappeared for some length of time from the blood circulation. 4. These experiments suggest that in trypanosome treatment effort should be made to neutralize the increased acidity of the blood, as this might prove of additional assistance in making the blood a less favorable medium for their development.

42. **Piroplasma Canis.**—Breinl and Hindle report observations which seem to point to the fact that the biflagellate forms of *Piroplasma canis* represent a very transient stage in its life history. This article is elaborately illustrated in colors.

Parasitology, London.

June.

45 Liver Abscess of Amebic Origin in a Monkey. A. Castellani.
46 Larval and Pupal Stages of *Anopheles maculipennis* Meigen. A. D. Imms.
47 Mode of Multiplication of *Piroplasma bovis* and *P. pithcci* in the Circulating Blood Compared with that of *P. canis*, with Notes on Other Species of Piroplasma. G. H. F. Nuttall and G. S. Graham-Smith.
48 Behavior of Spirochetes in *Acanthia lectularia*. G. H. F. Nuttall.
49 Structure and Biology of *Hæmaphysalis punctata*, Canestrini and Fanzago. G. H. F. Nuttall, W. F. Cooper and L. E. Robinson.
50 Hirudinea as Human Parasites in Palestine. E. W. G. Masterman.
51 A Gnathobdellid Leech (*Limnatis* sp?) from Angola. W. A. Harding.
52 *Cystidicola farionis*, Fischer. A Threadworm Parasitic in the Swim-Bladder of a Trout. A. E. Shipley.
53 Anatomy of *Cystidicola farionis*.' R. T. Leiper.

Dublin Journal of Medical Science, Dublin.

August.

54 Oxaluria and Phosphaturia. W. G. Smith.
55 Ocular Reaction in Tuberculosis. R. Holmes.
56 Protozoal Diseases in Man. A. F. G. Kerr.
57 Clinical Reports of the Rotunda Hospital. E. H. Tweedy.

Journal of Laryngology, Rhinology and Otology, London.

August.

58 Chronic Inflammatory Edema of the Submucous Tissues of the Nose. J. S. Fraser.
59 Laryngostomy and Tracheolaryngostomy in the Cure of Severe Chronic Stenosis of the Larynx or Trachea, especially when Cicatricial. Sargnon and Barlatier.

Annales de l'Institut Pasteur, Paris.

July 25, XXII, No. 7, pp. 561-623.

60 Report of Commission sent to Senegal to Study Trypanosomiasis. A. Thiroux, R. Wurtz and L. Teppaz.
61 Bactericidal Action of Extract of Leucocytes of Rabbits and Guinea-pigs. (Action bactéricide de l'extrait leucocytaire des lapins et des cobayes.) C. V. Korschun.
62 Opsonins and Antiphagins in Pneumococcus Infection. N. Tchistovitch and V. Yourevitch.
63 Specific Sensitizer in Malta Fever Serum. (Sensibilisatrice spécifique dans les sérums des animaux traités par le "M. Melitensis" et *dans le sérum des malades atteints de* fièvre méditerranéenne.) A. Sicre.

Annales de Médecine et Chirurgie Infantiles, Paris.

August 1, XII, No. 15, pp. 505-540.

64 Two Cases of Congenital Paroxysmal Cyanosis with Autopsy. G. Alvarez.

Presse Médicale, Paris.

August 12, XVI, No. 65, pp. 513-520.

65 *Pericarditis in Course of Poisoning from Mercury Bichlorid. A. Petit and J. Milhit.
66 *Mineral Waters in Treatment of Syphilis. (Eaux minérales dans le traitement de la syphilis.) C. de la Carrière.
67 Probable Existence of Nerves to Excite the Glands for the Renal Secretion. (Existence probable de nerfs excito-glandulaires pour la sécrétion rénale.) H. Delaunay.

August 15, No. 66, pp. 521-528.

68 Deformity of Hip with Lumbar Scoliosis. (Déformation des hanches dans la scoliose lombaire.) P. Desfosses.
69 Ethereal Sulphates in Urine in Pathologic Conditions. (Les sulfo-éthers urinaires.) H. Labbé and G. Vitry.
70 Importance of Graphic Registration of Neuromuscular Reactions for Industrial Accident Insurance. (L'électro-diagnostic graphique.) J. Larat.

65. **Pericarditis from Bichlorid Poisoning.**—A young woman had a transient but severe pericarditis, without effusion or fever, after an attempt to commit suicide by ingestion of 1.3 gm. (about 20 grains) of mercury bichlorid. The pericarditis became evident about the tenth day and persisted for three weeks.

66. **Mineral Waters in Treatment of Syphilis.**—Carrière attributes the beneficial action of sulphur waters in syphilis to the combination of the sulphur with the insoluble mercury albuminate resulting from mercurial treatment, transforming it into a soluble mercuric sulphate. The sulphur waters act on the mercury which remains stored up and inert in the organs, and renders it soluble, thus restoring its therapeutic power even a long time after its ingestion. A course of sulphur waters, he adds, also prevents or cures symptoms of mercury poisoning, as the waters induce rapid elimination of the mercury. Syphilitics taking sulphur water can bear mercury in doses two or three times the average, even in case of very susceptible individuals. The patient is kept in a mercurial atmosphere, he says, which might be dangerous if it were not for the safety valve formed by the sulphur. Even the average doses are better utilized, and thus better results are obtained. He advises an occasional course of sulphur water for every syphilitic, even when he is apparently well. During the first stage of syphilis these courses should be taken preferably during the periods of suspension of mercurial treatment. Later it is a good precaution to combine the waters with the specific medication.

Revue de Chirurgie, Paris.

August 10, XXVIII, No. 8, pp. 213-339.

71 Clinical and Histologic Study of Chondroma and Osteochondroma. (Tumeurs ostéochondromateuses complexes.) V. Cornil and P. Coudray.
72 Tarsectomy Retaining the Calcaneum. M. Vallas and L. Desgouttes.
73 Advantages of and Various Technics for Utilization of Uterus in Plastic Operations for Genital Prolapse. J. Martin.

Semaine Médicale, Paris

August 19, XXVIII, No. 34, pp. 397-408

74 *Isotonic Solution of Quinin for Intravenous Injections. (L'isotonie des solutions de quinine pour injections intraveineuses.) P. Chapelle.

74. **Isotonic Solution of Quinin for Intravenous Injections.**—Chapelle reviews the literature on this subject and shows how a typographic error in the formula in an Italian journal has been reproduced and copied from one journal to another and even got into an original article by Baccelli, the originator of the method, in the *Berliner klinische Wochenschrift* in 1890. The concentration given would prove dangerous for intravenous injection. Chapelle concludes from his research that each liter of an isotonic solution of quinin hydrochlorid must contain about 75 gm. of this salt (that is, a 7.5 per cent. solution). If there is less than 75 gm. of the hydrochlorid to the liter, each lacking gram of the quinin salt must be replaced by 0.125 gm. of sodium chlorid.

Archiv fur klinische Chirurgie, Berlin.

LXXXVIII, No. 4, pp. 859-1087. Last indexed August 22, p. 713

75 *Plastic Operations on Bones. (Osteoplastik.) A. Barth.
76 Case of Hematolymphangioma. J. Noval.
77 *Aseptic Operations on Intestines. (Aseptische Darmoperationen.) L. Moszkowicz.
78 Appendicitis Following Trauma. F. Bruning.
79 *Free Bone Plastic Operations and Attempts at Transplantation of Joints and Stiffening Joints. (Verwendung der freien Knochenplastik nebst Versuchen uber Gelenkversteifung und Gelenktransplantation.) E. Lexer.
80 *Operative Treatment of Fractures and Their Consequences. (Operative Behandlung der Knochenbruche und ihrer Folgen.) S. Peltesohn. Commenced in No. 3.
81 *Local Anesthesia of Limb by Venous Transfusion After Expulsion of Blood. (Neuer Weg Localanasthesie an den Gliedmassen zu erzeugen.) A. Bier.
82 Experimental Research on Changes in Nissl's Granule with Spinal Anesthesia. (Veranderungen der Nissl'schen Granula bei der Lumbalanasthesie.) E. Wossidlo.
83 Operative Treatment of Chronic Abscess of the Lung. Perthes.
84 Tuberculous Tumor of Sigmoid Causing Stricture. J. Boese.

75. **Plastic Operations on the Bones.**—Barth reports favorable results from implantation of dead bone substance when certain conditions are observed. Among the cases are some in which the bone marrow was still capable of ossification, but lacked the necessary lime for callus formation. The local supply of lime containing material, bone charcoal, provided the needed substance and the defect soon filled up with new bone tissue. Autoplastic operations with pieces of bone with attached periosteum, to bridge gaps in the long bones, is the sovereign and only certain method to date. Axhausen's research has supplied a basis for homoplastics, he says, and bright day has dawned for osteoplastic surgery.

77. **Aseptic Operations on the Intestine.**—Moszkowicz has been extensively applying Rostowzew's technic for aseptic operations on the intestines. He has modified it somewhat, and here gives an illustrated description of the instruments and technic, claiming that this method realizes the ideal of aseptic operations on the intestines.

79. **Transplantation of Joints and Other Plastic Operations on the Bones.**—Lexer's experience in transplanting entire joints has attracted much attention. He says that fresh, still warm human bones give the best results in transplantation. He seldom takes the bones from the patients, as amputations on account of dry senile gangrene have hitherto supplied him with ample material. He has never had a mishap or failure in transplanting these fresh human bones, with their attached periosteum, even in defects of from 20 to 30 cm. in length. In four cases he transplanted part of the shaft and joint with good results and in two cases an entire joint. In the two latter cases the entire knee was resected and a new knee implanted. Each patient can now use the knee a little, after seven and four months respectively, and in one case the knee can be bent passively to an angle of 45 degrees. There is no pain in standing or walking in either case. He adds that if one is economical with the amputation material, a limb otherwise thrown away will supply material for several transplantation cases.

80. **Operative Treatment of Fractures and Their Consequences.**—Peltesohn concludes his long article with an illustrated summary of 60 cases in which various technics were applied in Korte's service at Berlin.

81. **The Venous Transfusion Method of Local Anesthesia.**—THE JOURNAL, June 6, page 1914, referred to Bier's first communication on his method of local anesthesia by venous transfusion. The details are given here, confirming the possibility of obtaining complete anesthesia by local technic even for such operations as resection of joints, tendon transplantation, etc. The blood is carefully expelled from the limb by bandaging from the periphery upward. Then, above the field of operation, constriction is applied with a soft, narrow elastic band wound many times around the limb to cover a broad segment. This method of constriction is not painful or annoying, while it keeps the blood effectually out of the limb. A second similar elastic bandage is applied below the operating area. A subcutaneous vein between the bandages is opened, as for intravenous infusion, and the weak solution of the anesthetic is injected toward the valves of the vein. Hitherto he has used for adults from 60 to 80 c.c., for resection of the knee, and from 40 to 50 c.c., for the elbow, of a 0.5 per cent. solution of novocain, or about twice the amount of a 0.25 per cent. solution. The anesthesia follows in from two to fifteen minutes. In a typical case described the elbow was resected in a very sensitive patient, without pain, and the ankylosed fingers were energetically exercised before sensation returned, seven minutes after removal of the constriction. The anesthetic must be dissolved in physiologic salt solution; it rapidly penetrates the walls of the vein and acts on the nerve terminals as well as on the nerve trunk. The expulsion of the blood allows a large proportion of the drug to be bound so that it is only gradually yielded up to the circulation. A large part of the solution injected also escapes outward through the surgical wound, before the constriction is finally removed. To promote this, after the operation is finished but before the suturing is commenced, Bier removes the peripheral bandage and loosens the central bandage, very slowly, until the arteries open but the veins are still compressed—that is, until the limb begins to grow pink and the surgical wound bleeds freely. By this means most of the novocain solution left in the vessels is washed out with the blood. The central bandage is tightened again until the arteries are compressed and the wound is then sutured before the anesthesia subsides. When he uses the largest amounts of the anesthetic he leaves the cannula in the vein and just before finally removing the constricting band he flushes the entire vascular system of the operating area with physiologic salt solution, injected through the cannula. It runs out again through the surgical wound. He remarks in conclusion that this method of anesthesia shows how a fluid injected into a vein in a tied off segment of a limb is brought into intimate contact with all its tissues. He adds that this technic might possibly be utilized for other purposes, it seems to be the only way in which the Muller and Peiser antiferment could be brought into close contact with all the tissues for treatment of diffuse phlegmons.

Berliner klinische Wochenschrift.

August 17, XLV, No. 33, pp. 1517-1556

85 Relations between Bacilli of Human and Bovine Tuberculosis. (Beziehungen der Bacillen der menschlichen Tuberkulose zu denen der Perlsucht des Rindes.) K. Steffenhagen.
86 Further Research on History and Treatment of Tuberculosis. (Forschungen zur Behandlung der Tuberkulose.) E. Klebs.
87 *Resection of Elbow with Retention of Function. (Ellbogenresektionen mit Erhaltung der Beweglichkeit.) V. Schmieden.
88 Abducent Paralysis after Spinal Anesthesia. (Abducenslahmung nach Lumbalanasthesie mit Tropacocain.) C. Gontermann.
89 *Paraffin Prothesis. V. S. Stein.
90 Toxin and Anaphylactic Substance of Eel Serum. (Aalserum.) R. Doerr and H. Raubitschek.
91 Action of Peroxids on Digestive Organs. (Wirkung von Superoxyden auf die Verdauungsorgane.) Togami.
92 *Etiology and Treatment of Singers' Nodules. (Sangerknötchen.) E. Barth.
93 Principles of Modern Treatment of Cripples. (Moderne Kruppelfursorge.) Biesalski.

87. **Resection of the Elbow with Retention of Movements.**—Schmieden reports from Bier's clinic at Berlin 11 cases in which the elbow was resected by a technic of which he gives an illustrated description. In 6 cases the operation left a usable joint even for hard manual labor, in 4 cases the move

ments were only slightly restricted and the results were bad in one case. The main feature of the technic is the interposition of a pedunculated muscle flap from the triceps between the raw stumps of the joint cut in the physiologic curves

89. **Paraffin Prosthesis.**—Stein's syringe for injecting cold paraffin under pressure has won wide approval. He here gives a number of technical points which facilitate the operation. There should be no admixture of vaselin with the paraffin, and the melting point should not be above 50 C. (122 F.). He says that it is important to determine the melting point for each specimen. He does this by what he calls the "disc method." A piece of thin, soft iron wire, such as florists use, is passed around a steel rod, 6 5 mm. in diameter, and the ends twisted to form a loop with handle. This little wire loop or ring is dipped in the melted paraffin. It fills with a thin film of paraffin which rapidly hardens This disc of film is then suspended in water which is then heated and the temperature of the water noted at the point when the disc of paraffin begins to melt around the edges. This technic gives constantly reliable findings

92. **Treatment of Singers' Nodules.**—Barth gives an illustrated description of the mechanism of the movements of the vocal cords and shows the causes for the formation of singers' nodules They are due to a false method of using the throat As the tone rises the thyroid cartilage is drawn upward, with this false technic The correct technic causes the thyroid cartilage to be drawn down more and more, the higher the tone, and no tendency to the formation of nodules is observed. They disappear as the parts are rested, just as callous patches elsewhere retrogress. Treatment can be permanently effectual only when the singer or lecturer learns to use his throat mechanism correctly.

Deutsches Archiv fur klinische Medizin, Leipsic.

July XCIII, Nos. 5 6, pp 459 614 Last indexed, August 1, p 446

94 *Three Cases of Adams Stokes' Symptom Complex and Disturbance in Conduction of Impulse A Heineke, A. Muller and H v Hosslin
95 *Retrogression of Adams Stokes' Symptom Complex (Ruckbildung des Adams Stokes'chen Symptomenkomplexes) D. Gerhardt
96 Graphic Registration of Tympanitic and Non tympanitic Percussion Resonance. (Graphische Studien uber den tympanitischen und den nichttympanitischen Perkussionsschall) R May and L Lindemann.
97 Fermentative Power of Polypus Secretion in Case of Extensive Polyposis of Colon and Rectum, and Observation of Action of Purgative Esser
98 *Measurement of Systolic and Diastolic Blood Pressure (Messung des systolischen und diastolischen Blutdruckes) M John
99 Behavior of Pepsin and Lab in Fundus and Pylorus of Human Stomach, and Rela[illegible] 'epsin and Concentration of th[illegible] 'epsin und Lab im Fundus und [illegible] zens nebst einigen Bemerkunge[illegible] on Pepsin wirkung und Saureko[illegible]
100 Formation of Inclusio[illegible] Basophilic Granulated Red Co[illegible] in poly chromatischen und [illegible] Blutkorper chen) E Sluka
101 Research on Hyperemia with Nephritis M Halpern.
102 Case of Syringomyelia with Bulbar Symptoms (Syringobulbie mit Sektionsbefund) L Enders

94 **Adams-Stokes' Syndrome.**—This communication from Muller's clinic at Munich reports three cases of the Adams Stokes' syndrome and two of disturbances in conductibility without the above syndrome In the first case the bundle of His showed pathologic changes corresponding to the partial disturbance in conduction In the second case there was complete obliteration of this bundle, although the ventricle frequently contracted in connection with the auricle This justifies the assumption that, under certain circumstances and long duration of the affection, other routes for the conduction may be developed The third case was distinguished by the absolute arrhythmia of the pulse; it demonstrates that the Adams Stokes' syndrome may be the result of irritation of or pathologic processes in the vagus nerve One pulse tracing of the first case showed an interpolated auricular extrasystole

95 **Retrogression of the Adams-Stokes' Syndrome.**—Gerhardt reports two cases in which the typical syndrome completely retrogressed while under observation The number of blocked systoles grew less and less until finally the beat was normal Both patients were elderly and the disturbances in the bundle of His were evidently of arteriosclerotic origin. One patient was a woman of 65, and the attacks suggesting heart block recurred at intervals. Another patient was a man of 25, previously healthy, recovering from acute articular rheumatism. The attendant who waited on him had recently recovered from typhoid, and he contracted the disease and succumbed to hemorrhage the fifth week. During the first week of the acute rheumatism severe symptoms of heart block recurred at intervals, finally yielding to normal heart action. Autopsy revealed considerable anatomic changes in the bundle of His which sooner or later would probably have induced renewed symptoms in the conduction. The case shows how inflammation may develop in the bundle of His in the course of an acute infectious disease and may entail severe but transient attacks of Adams Stokes' paroxysms, the disturbance in conduction gradually subsiding in the course of a few weeks until the heart action may be apparently normal, notwithstanding the persistence of lesions in the bundle of His.

98 **Study of the Blood Pressure.**—John continues the work in this line which his chief, Volhard, has been conducting for many years. He has recorded the blood pressure before and after various therapeutic measures, such as electric baths, or before and after use of alcohol and nicotin. Variations in the blood pressure seem to be most pronounced with arteriosclerosis. He tabulates his findings under various headings, and remarks that it is interesting to note how failing compensation can be restored approximately to normal by rest in bed and appropriate diet alone, dyspnea and edema disappearing without a drop of digitalis merely by limiting the intake of fluids All this can be instructively traced by repeated control of the pulse pressure. The dyspnea of patients with contracted kidney can be remarkably influenced by restricting the patient for six days to 200 c c of milk four times a day. A sudden drop in the pulse pressure indicates digitalis or some similar remedy at once He noticed that certain patients, convalescing from an infectious disease, on getting out of bed and standing erect showed a rise in the pulse rate from 72 to 110 or 120, or even to 144 or more. The pulse became small and the patients felt dizzy The pulse rate declined again when they returned to bed Other patients not suffering from an acute infection never showed an increase of more than 24 beats and this dropped by 12 or 16 beats in about five minutes. The systolic pressure showed a slight drop while the diastolic pressure increased, but only by 5, 8 or 10 cm water. In the convalescents from acute infections the systolic pressure dropped by several centimeters while the diastolic increased by 10 or 20 cm. or more. In none of these patients of either group was there anything to indicate cardiovascular disease. He emphasizes that these findings demonstrating weakness on the part of the vascular system are important for determining when a patient can be allowed to get up after an infectious disease It is especially important in general practice, when the patient can not be seen every day He advises having the patient get up and stand while the pulse is noted for five or ten minutes. If the rate rises from 70 or 80 to 110 or 120, it is better to leave the patient in bed for a while longer until these pulse findings approximate normal, that is, until the pulse does not run above 100 in ten minutes, standing

Deutsche medizinische Wochenschrift, Berlin.

August 13, XXXIV, No 33, pp 1417 1456

103 *Obstetrics, Old and New (Alte und neue Geburtshilfe) H. Fritsch
104 Trypanosome Infection and Complement Binding. C Schilling and v Hoesslin
105 Experimental Study of Pathogenesis of Local Tetanus K. Pochhammer
106 Structure and Genesis of Symptomatic Xanthoma F Pinkus and L. Pick
107 Primary, Fatal Anthrax of Tonsil (Milzbrand der Tonsillen) Z Noury, Pascha and Haidar, Bey.
108 Computation of Conception, Menstruation and Duration of Pregnancy. (Schwangerschaftsberechung) H. Bab

103 **Obstetrics, Old and New.**—Fritsch here reviews the trend of obstetrics in his forty years of professional practice. He remarks that the main progress in this long period, in all specialties, is traceable to the surgical tendency Wherever great advances and good results have been achieved it has always been by the specialty's becoming surgical Obstet

ricians would not keep up with the procession if they shrank from taking part in this mode of progress He even asserts that it seems as if the more surgical a medical specialty has become, the farther it has progressed This is so in obstetrics and gynecology, as also in internal medicine, in otology and in all the other specialties He urges that in every difficult obstetric case the patient should be sent to a hospital, remarking that if the law required that every woman should be confined in a lying in institution the lives of hundreds of women and children would be saved every year.

Fortschritte der Medizin, Leipsic.

July 30, XXVI No 21, pp 641 672.

109 *Beginning of Training for Mental and Physical Health During First Year of Life (Anfänge einer Erziehung zu geistiger und körperlicher Gesundheit während des ersten Lebensjahres) Eschle

109 **Training of the Infant.**—Eschle declares that the instinctive consciousness that certain actions have certain consequences develops extraordinarily early in the infant He is convinced that the foundations for moral and physical health should be begun to be laid when the infant is three months old During the first three months it should be accustomed to order and punctuality In the fourth month, if the infant learns that it does not gain anything but merely darkness by undue crying, its tendency to become a tyrant in the house is nipped in the bud The crying of a healthy child may be a means of useful exercise, and need not be necessarily suppressed, but if the crying becomes a bad habit it may have evil consequences not only for the physical development but also on the future character The infant has no fear of darkness, but when it finds that motiveless and too long continued crying merely causes the room to be darkened, it soon wearies of crying and the little being struggling for existence (and for the mastery of the house) learns to control its desire to cry and to tyrannize

Munchener medizinische Wochenschrift.

August 11, LV, No 32, pp 1673 1720

110 *Puncture of the Corpus Callosum in Hy and with Tumors (Balkenstich bei oren und bei Epilepsie) Anton and
111 *Office Tests of Heart Functioning (Wie prüfen wir in der Sprechstunde die Funktion des Herzens) Waldvogel
112 Origin of *Pertussis* (*Untersuchungen zur Entstehung des Keuchhustens*) C Fraenkel
113 Toxic Non Bacterial Cut mentelle an der toxische Bedingungen ihres Entstehens) K Zieler
114 Much's Granular Form of Tuberculosis Virus M Wirths
115 Specificity of Serum Diagnosis of Syphilis (Spezifizität der Komplementbindungsmethode bei der Syphilis) Jochmann and Topfer
116 *Treatment of Scarlet Fever (Behandlung scharlachkranker Kinder) K Oppenheimer
117 Treatment of Summer Diarrhea in Children (Behandlung der Sommerdurchfälle der Kinder) M Goetz
118 *Radical Operation for Inguinal Hernia* (Radikaloperation der Leistenbruch kenbruch
119 *Treatment of
120 *Extraction of C Haeberlin
121 Beginning of (Ophthalmozytoreaktion) J Sabrazès and C. Lafon.

110 **Therapeutic Puncture of the *Corpus Callosum*.**—Anton and Bramann report four cases in which improvement followed puncture of the corpus callosum, made through the longitudinal fissure from near the vertex The opening is made with a blunt instrument, and it is enlarged to maintain a permanent communication between the lateral ventricle and the dura The benefit was striking, although the cases in which it has been done to date were severe They proved, however, that it is possible to insert a curved cannula feeling its way along the falx to the lowest part, when it is pushed through the corpus callosum into the lateral ventricle The first patient was a boy of 10 with hydrocephalus and symptoms indicating pressure and aplasia of the cerebellum Great improvement followed the intervention The second patient was a workman of 50 with serous meningitis and intense headache, vertigo and optic neuritis. The process was evidently arrested and the headaches and vertigo have disappeared. The third patient was a sailor of 26, with a tumor in the posterior cranial fossa, and choked disc Since the puncture of the corpus callosum, the intense headache has subsided and there has been no further vomiting, while the gait has improved. If the puncture had been made months before, vision might have been retained This case shows the importance of this intervention while waiting for localization of the tumor to become possible Besides hydrocephalus, with or without tumor, this intervention may prove of great benefit in hypertrophy of the brain The brain and the skull do not always enlarge in proportion, the authors remark, and it is no mere coincidence that by far the largest proportion of enormously hypertrophied brains are found among epileptics. If the fluid in the ventricles is allowed free escape, benefit may be anticipated, as also in cases of pseudotumors. At first the authors cut a flap about 4 cm square between the sagittal and coronary sutures, but later found that a drillhole gives sufficient access.

111. **Office Tests of Heart Functioning.**—Waldvogel examines the systolic blood pressure with the patient horizontal and again as the patient stands, and summarizes his findings with 130 patients. This simple test of the systolic blood pressure as the patient lies and stands up can never prove an exertion for the heart, while nervous influences are almost entirely excluded, and the effort is proportionately the same for all human beings. As the patient reclines the Recklinghausen cuff is applied and the Riva-Rocci manometer is applied to the heart region. The patient holds the manometer with his free hand and the systolic pressure is noted twice. Then the patient is told to get up quietly; as he stands he holds the manometer with his free hand, on a level with his heart, and again the systolic pressure is noted twice on the arm bent at the elbow, the wrist lightly supported by the observer. Quick work is necessary, as the pressure soon fluctuates. He tabulates the findings in six tables, the first showing the cases with the same pressure in both positions, the other showing a rise or fall in the pressure, from 5 to 20 mm. or more, from the change of position It seems evident that a drop of 10 or 20 mm on standing is an index of a pathologic condition in the heart action, although a drop of 10 mm. is still within the normal range. The greatest difference, 35 mm., was observed in a case of contracted kidney and alcoholism.

116. **Treatment of Scarlet Fever.**—Oppenheimer warns against allowing the child to become chilled. He never exposes the child much for examination, and forbids general bath- After expectant treatment in the first stage he allows, the second or third day, tea diluted with milk, lemonade or water, but nothing else until the appetite returns as the acute toxic symptoms subside He says that the diet is of more importance in scarlet fever than in any other infectious disease, on account of the tendency to nephritis. It is important to avoid eggs, meat and soup, avoiding even dishes containing eggs. He insists on keeping the child in bed for five or six weeks, as nephritis is liable to develop in the fourth or fifth week. In an experience of 150 scarlet fever patients treated on these principles—avoidance of baths and cold packs and of meat, soup and eggs—he has never had scarlatinal nephritis develop in any instance He would like an institution to which scarlet fever children could be taken, allowing their mothers to accompany and wait on them, and the family physician to attend his little patient.

119. **Treatment of Hydrocele.**—Mohr reports two cases which demonstrate that injection of a solution of adrenalin after puncture and evacuation has certain advantages over other methods of injection when the effusion displays a tendency to recur. Actual healing has not occurred in either case. In two other cases he operated according to Klapp's technic with good results This technic can be applied under local anesthesia and ambulant, while it prevents recurrence, and there can be no kinking later of the seminal passages and blood vessels

120 **Extraction of Needles.**—Haeberlin extols the advantages of fluoroscopic examination, at various angles, of the part containing the needle

Therapeutische Monatshefte, Berlin.

August, XXII, No 8, pp 383 436.

122 *Experiences with Pyocyanase in Treatment of Diphtheria W Fackenheim
123 Intoxication with Bismuth Subnitrate and Its Substitution with Bismuth Carbonate E Meyer.

124 *Cardiospasm as Cause of Habitual Vomiting of Infants (Der Kardiospasmus eine Ursache des habituellen Erbrechens der Sauglinge) F Goppert
125 *Diagnosis and Treatment of Pityriasis Rubra A Halle
126 *Yoghurt Lobel
127 Treatment of Nasopharyngeal Catarrh in Children (Nasen
ein) A Hecht
128 Physical Bases (Tropfendosierung
Grundlagen) T Lohnstein

Virchows Archiv, Berlin

August CXCIII, No 2, pp 177 352

129 Morphology of Liver Glycogen and Structure of Liver Cell J Arnold Commenced in No 1
130 Structure of Lobule of Liver under Influence of Splanchnic Nerve (Bau des Leberlappchens unter dem Einfluss des Nervus splanchnicus) W Kolski
131 Experimental Study of Consequences of Stenosis or Obliteration of Common Bile Duct (Zur Kenntnis der sog biliaren Leberzirrhose) T Tsunoda
132 The So called Valve Hematoma Also Study of the Vascular Supply of Valves of Human Heart (Klappenhamatome) F Hammes
133 Heart with Three Auricles (Ein weiterer Fall von Cor triatriatum mit eigenartig gekreutzer Mündung der Lungenvenen) H Stoeber
134 Pathology of Mucosa of Human Esophagus (Pathologie der menschlichen
Lindemann
135 Retrogressive C and Their Consequences (Epiglottisknorpels und deren Folgezustande) Id
136 Ochronosis F Landois
137 Inebriety as Cause of Deaths at Basle, 1892 1896 (Trunksucht als Todesursache) R Pfister
138 A New Parasite Disease Its Causal Organism and Its Endemic Occurrence in Various Parts of Japan (Schistosomiasis japonica) I Tsuchiya

122 **Pyocyanase in Treatment of Diphtheria.**—Fackenheim has applied pyocyanase as adjuvant to serum treatment in 48 cases of diphtheria, including 6 with signs of sepsis This experience has convinced him that the local spray of pyocyanase is an important aid in severe cases It seems to destroy the bacteria in the throat and thus prevents further formation of toxin This action is shown in the rapid subsidence of the throat lesions the disappearance of the bacilli and the rapid improvement in the general health Experiments are now under way to test the efficacy of subcutaneous inoculation of the pyocyanase It will be remembered that the pyocyanase is merely the filtrate of a three weeks old culture of the pyocyaneus bacillus Emmerich assumes the presence of a bacteriolytic enzyme in the fluid on account of the rapid destruction of the bacteria and of the film that forms on the surface of the culture He uses a Berkefeld filter and reduces the filtrate in a vacuum to one tenth its volume, as has already been described in these columns

124 **Cardiospasm as Cause of Vomiting in Infants**—Goppert describes a peculiar case of habitual vomiting in an otherwise healthy child, commencing at the fourth month The symptoms suggested regurgitation in some respects, but he finally diagnosed cardiospasm He introduced a sound about 4 mm thick, passing it through the nose into the stomach, and poured the child's food into the stomach There was no tendency to vomiting when the child was fed in this way, and it was gradually trained to physiologic feeding In three months all disturbances had vanished By attacking the spasm from below, filling the stomach through the sound, the child was not only able to be properly nourished but the affection was given a turn for the better and spontaneous recovery inaugurated

125 **Pityriasis Rubra**—Halle discusses the differentiation of this affection calling special attention to the itching the localization the prevalence in persons between 15 and 35 years old the color and scaling and the oval shape of the efflorescences A spontaneous tendency to heal is pronounced if the parts are kept dry Baths and rinsing the parts or sweating aggravates the affection as also hot or alcoholic drinks He applies with a brush a mixture of equal parts of zinc oxid Venetian talcum glycerin and water, dusting copiously with talcum afterward and washing off every day with olive oil Tar and naphthol or moist dressings are liable to entail a dermatitis which may prove difficult to cure

126 **Yoghurt**—Lobel says that yoghurt—Bulgarian clotted milk—is now the fashion and seems to be answering all rational expectations It is not the 'elixir of life" which the interviewers claim but it certainly displays a tendency to expel a harmful intestinal flora and supplant it by a useful flora, as Lobel shows from his own and others experience

Wiener klinische Wochenschrift

August 13, XXI, No 33, pp 1175 1202

139 Modern Views in Regard to the Speech Center (Revision der Aphasiefrage) M Blassberg
140 Proteolytic Cellular Activity of Malignant Tumors (Proteolytische Zelltätigkeit maligner Tumoren) L Hess and P Saxl
141 Avoidance of Dangers of Ocular Tuberculin Reaction (Gefahren der Ophthalmoreaktion und ihre Vermeidung) A Wolff Eisner
142 *Symptomatology of Heart Affections (Zur Semiotik der Herzkrankheiten) A Strubell

142 **Symptomatology of Heart Affections**—Strubell's long article is an introduction to a study of functional differentiation and treatment of heart disease He shows how the results of experimental research have thrown light on affections of the circulation In particular he calls attention to the importance of the work of von Basch showing that angiosclerosis is merely a change in the elasticity of the vessels The various degrees of this are 1 the purely functional vasomotor contraction of the abdominal vessels in the nervous—pseudoangiosclerosis, 2, the transient functional contraction on a toxic base, as in acute nicotin poisoning, 3, the still functional and reparable increase in the elasticity from toxic influences persisting through several weeks, as in acute nephritis, 4, the first durable increase in elasticity, as in subacute or chronic nicotin poisoning, with the first signs of secondary hypertrophy of the heart The arterial pressure is increased, but may return to normal under appropriate treatment This is the borderland between pseudo and latent angiosclerosis These are followed by the three more pronounced types the most severe including intermittent claudication, ready brain fag, high arterial pressure, inevitable hypertrophy of the heart and, generally, more or less degeneration of the myocardium The functional reaction is not entirely abolished even in the severest cases The whole trouble, he says, is the result of increased elasticity of the vessels with more or less disturbance in their capacity for reaction, which may be reduced or morbidly increased

Zentralblatt fur Chirurgie, Leipsic

August 15, XXXV, No 33 pp 993 1016

143 Pathologic Non coaptation of the Surfaces in Joints (Pathologische Gelenkflacheninkongruenz) G Preiser

Zentralblatt fur Gynakologie, Leipsic

August 15 XXXII No 33, pp 1081 1112

144 Case of Extraperitoneal Cesarean Section According to Sellheim (Fall von extraperitonealem Kaiserschnitt nach Sellheim) H Luchsinger
145 *Warning Symptoms of Thrombosis and Embolism (Kritik der prämonitorischen Symptome der Thrombose und Embolie) Nacke
146 *Towel Method of Chloroform Anesthesia (Chloroformnarkose mit überdeckter Maske) K Frankenstein

145 **Premonitory Symptoms of Thrombosis and Embolism**—Nacke has analyzed 5,000 maternity cases, especially 40 in which, according to the classic symptoms, thrombosis was inevitable Only two of these women, however, developed thrombophlebitis, one on the twelfth the other on the eighteenth day, after delivery In the others the assumed premonitory symptoms were referable to other casual or preexisting affections, such as rheumatism influenza, obstipation, nephritic irritation, gallstones or slight appendicitis chronic pelvioperitonitis, anemia and chlorosis, syphilis or other intestinal, bladder or abdominal affections On the other hand in every case of fatal embolism the puerperium had been entirely normal and death occurred suddenly when the patient first got up He concludes from this analysis that there are no certain premonitory symptoms and that we can only aim to prevent embolism by keeping the patient in bed on suspicion of thrombosis until the clot has had time to become organized

146 **The Towel Method of Chloroform Anesthesia**—Frankenstein's method has already been described in these columns, he here relates further experiences with it and lauds its advantages its simplicity its freedom from danger, the unusually small amount of chloroform or ether and the much shorter time required He gives illustrations of his mode of applying the once folded towel over the mask

Gazzetta degli Ospedali e delle Cliniche, Milan.

August 18, XXIX, No. 93, pp. 1033-1048.

147 Experimental Pellagra. G. Guyot.
148 Improved Technic for Determination of Elastic Fibers. (Ricerca delle fibre elastiche.) M. F. Felice.
149 *Uric Acid Metabolism During the Subcutaneous Oxygen Treatment of Neuritis and Neuralgia. (Oscillazioni della crasi urica, con speciale riguardo al comportamento dell'acido urico, nelle affezioni nevritiche e nevralgiche in rapporto all' ipodermo-emfisiterapia ossigenata.) T. Salvetti.
150 Benefits from Intravenous Injection of Mercury Bichlorid in Three Cases of Acute Articular Rheumatism. (Iniezioni endovenose di sublimato corrosivo nella poliartrite reumatica.) O. Ortali.
151 Experiences with Maragliano's Specific Treatment of Tuberculosis. B. Chmelar.
152 Connection Between Malaria and Metereologic Conditions. (Recrudescenza malarica in autunno susseguente ad una alluvione.) L. Nelli.
153 Sciatica from Compression by Echinococcus Cyst. P. Marogna.

149. **Uric Acid Metabolism During Oxygen Injections.**—Salvetti has been studying twenty patients with neuralgia or neuritis taking a course of treatment with subcutaneous injections of oxygen according to Bernabei's method. The results confirm the local and general tonic effect of this treatment and the increased elimination of waste matters. His experience reaffirms the assumption that neuralgia and neuritis are the result of the action of toxins, the organism being flooded with waste from sluggish biochemical metabolic processes. Bernabei's technic was mentioned in The Journal, May 23, 1903, page 1474, and later results with it, May 9, 1908, page 1576. The patients with uncomplicated neuralgia, especially sciatica, were given from 8 to 15 injections of an average of 225 c.c. (nearly 8 ounces) of oxygen. The injections are made at the most painful points of the nerve. The region swells and the gas gradually disappears from the local tissues in from two to twenty-four hours.

Hospitalstidende, Copenhagen.

July 15, LI, No 29, pp. 849-872.

154 *Operative Treatment of Inveterate Inversion of the Uterus. P. Guildal.
155 *Production of Uric Acid. (Urinsyrens Dannelse hos Mennesket.) I. P. Chrom. Commenced in No. 28.

July 22, No. 30, pp. 873-904.

156 *Determination of Tubercle Bacilli in Urine. (Om en rationel Fremgangsmaade til Paavisning af Tuberkelbaciller i Urinen.) V. Ellermann and A. Erlandsen.

August 5, No. 32, pp. 929-960.

157 Case of Alveolar Echinococcus Cyst. O. Møller.
158 Roentgen-Ray Diagnosis of Pulmonary Tuberculosis. J. F. Fischer and F. Tobiesen. Commenced in No. 31.

154. **Inveterate Inversion of the Uterus.**—Guildal remarks that only three cases have been encountered among the 4,064 gynecologic patients at the Copenhagen Deaconess Hospital. The first patient had complete inversion, resisting attempts at reduction under ether or chloroform, repeated eleven times, and the uterus was finally amputated. In a later case the inversion was reduced by a conservative posterior hysterotomy restoring approximately normal conditions. After an incision in the anterior vaginal vault and palpation of the inverted organ, the rear wall of the uterus was then incised. This allowed the organ to be readily reinverted, as every point of the incision moves in a plane at right angles to the longitudinal axis of the uterus, each describing an arc from behind outward and forward as the organ is reinverted. The incision in the uterus was then sutured in two tiers and the organ restored to place, through the incision in the vaginal vault. If necessary, a second incision can be made, at right angles to the first. A wick was introduced to drain the suture in the uterine wall. The patient has been in good health since this operation, attending to arduous household duties without disturbance. The inversion was only about the size of half an egg (hen's) at first, but it caused repeated hemorrhages and great debility with syncope when any attempt at reduction was made, the patient requiring hospital care for nearly two years. Menstruation continued approximately normal with frequent hemorrhages in the intervals. There has been nothing to suggest that the uterus has become fastened in retroflexion since, which is a possible drawback of the posterior technic. Some surgeons think that the dangers from an ensuing pregnancy are so great that they advise sterilization of the woman at the same time, but Bouté, Dahlgren and Born have witnessed entirely normal pregnancies since an operation of the kind. In any event, the course of a subsequent pregnancy should be supervised with unusual care. If many adhesions are found with inverted uterus, Guildal regards abdominal hysterectomy as the only procedure. There were no adhesions in either of his cases; the patients were primiparæ and the inversion occurred spontaneously soon after forceps delivery in two of the cases.

155. **Production of Uric Acid.**—Chrom in this long biologic study presents the results of much research which, he thinks, demonstrates among other things that the amount of uric acid eliminated in the urine is determined by the amount of substances which generate the ethereal sulphates.

156. **Improved Technic for Detection of Tubercle Bacilli in Urine.**—Ellermann and Erlandsen reported last April an improved technic which they said shows up the tubercle bacilli in sputum from ten to twenty times more effectually than other methods. It was described in The Journal, June 27, 1908, page 2157. They now describe a modification of this technic for application to urine, which, they assert, is an equal advance over previous methods. The urine is drawn with a catheter and allowed to settle, when the supernatant fluid is decanted and from 10 to 15 c.c. of the sediment are centrifugated. In case of unusual proportions of urates they are removed by heating before centrifugating. After centrifugating the supernatant fluid is decanted, and, after noting the amount of the sediment, the latter is mixed with four times its bulk of a 0.25 per cent. solution of sodium carbonate and kept in the incubator for twenty-four hours at 37 C. (99 F.). If the reaction afterward is still acid it may be necessary to add a little more sodium carbonate and allow the digestion to continue somewhat longer. The upper layer of the supernatant fluid is then decanted and the rest again centrifugated. To the sediment left then, after pouring off the supernatant fluid, is added four times its volume of a 0.25 per cent. solution of sodium hydrate, stirred with a glass rod till dissolved. The whole is then heated to boiling on the water bath. On cooling it is once more cautiously centrifugated, and the sediment then obtained is used for the microscopic slide. This "double method" is required only when negative results are obtained from microscopic examination of the sediment from the first centrifugation. This method gives from ten to fifteen times better results than centrifugation alone, revealing bacilli too scanty for detection by other means. They say that a negative result with their technic is almost certain proof of the absence of tuberculosis.

Books Received

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Fourth Annual Report of the Henry Phipps Institute. Feb. 1, 1906, to Feb. 1, 1907. Edited by Joseph Walsh, A.M., M.D. Paper. Pp. 430, with illustrations. Philadelphia: Published by the Henry Phipps Institute, 1908.

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Diseases of the Spinal Cord. By R. T. Williamson, M.D. (London), F.R.C.P., Assistant Physician, Royal Infirmary. Cloth. Pp. 432, with illustrations. Price, $5.50. London: Oxford University Press, 1908.

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The Struggle Against Tuberculosis in Sweden, 1908. Edited by Sture Carlsson, M.D. Paper. Pp. 200, with illustrations. Stockholm: Centraltryckeriet, 1908.

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The Present Pandemic of Plague. By Assistant Surgeon-General J. M. Eager. Paper. Pp. 30. Washington: Government Printing Office 1908.

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Addresses

INFANT MORTALITY.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON DISEASES OF CHILDREN, AT THE FIFTY-NINTH ANNUAL SESSION, AMERICAN MEDICAL ASSOCIATION, 1908.

EDWIN E. GRAHAM, M.D.

Professor of Diseases of Children in Jefferson Medical College.
PHILADELPHIA.

The modern tendency in medicine is to concentrate each individual's efforts within comparatively narrow limits; if possible, to add some new facts or theories to present knowledge. The sum total of all the additions and advances has revolutionized medical knowledge in the last twenty years. Countless intelligent and zealous physicians working along different lines and in special departments of medicine have made it difficult, if not impossible, for any one to keep fully abreast of the times in all branches of medical science.

Perhaps this tendency in modern medical study has led to the neglect of certain broad principles of hygiene, diet, fresh air, bathing and general methods of living; these, being every one's business, have become no one's business.

John Gardner, surgeon, London, wrote in 1838 an interesting pamphlet on "Why So Large a Number of Children Perish." He appreciated certain physiologic differences between a child and an adult, and under "Dentition" wrote:

> The true nature of the effect of this natural process on the health and life of children is much misapprehended. In a healthy body, the teeth are always cut without suffering, and not far wide of the ninth month. The passage of the teeth through the gums produces a slight excitement, which is not a deviation from health.

Benjamin J. Crew, of Philadelphia, wrote in 1882 an excellent article on "The Care of Deserted Infants," which was read before the Assembly Meeting of the Philadelphia Society for Organizing Charity, in March of that year. In this article he strongly advocates a combination of "placing out" and "asylum plan" for these infants and quotes statistics which clearly prove how great is the reduction in the mortality in infants under the plan of treatment advocated.

J. Brendon Curgenven, M.R.C.S., London, 1867, writing on "The Waste of Infant Life," states that the excess of infantile mortality occurs in laboring people. The poorer and lower classes show a mortality of 35 to 55 per cent. under the age of five years; the educated and well-to-do, only 11 per cent. He analyzes the Registrar General's report, and shows clearly the causes of this excess of 24 to 11 per cent. of deaths. Reference will be made to these statistics later.

In an article written by Dr. William Farr, over thirty years ago, he stated that the mean annual death rates of infants under one year in some of the principal countries of Europe were as follows: Out of one thousand infants there died yearly in Sweden 141.8; in Denmark, 137.5; in England, 182.6; in France, 223.2; in the Netherlands, 237.5; in Spain, 249.6; in Italy, 273.3.

The annual death rates in one thousand children under five years, according to the same authority, were: In Norway, 40.9; in Sweden, 51.4; in Denmark, 52.7; in England, 67.6; in Belgium, 74.9; in France, 79.2; in Prussia, 82.4; in Holland, 91.2; in Austria, 104.0; in Spain, 111.7; in Italy, 113.5.

A. Brothers, B.S.M.D., in his article on "Infantile Mortality During Child-Birth, and Its Prevention," in 1896, states that in the four years, 1889 to 1892, the total number of births in New York City was 173,126, and that during this period of four years 16,888 children born at term have died within the age of one month. Ten per cent. of the children, therefore, are lost before they reach the age of one month.

Collective statistics from sixteen European cities embracing 1,439,056 children show that 10 per cent. of those born alive die within the first four weeks of life. Erőss' statistics show that the greatest number of deaths occurred on the first day of life, and that the deaths diminish day by day. According to Erőss, 54.24 per cent. of the deaths among children within four weeks after birth are due to congenital debility.

William Moore, in a paper read before the Dublin Obstetrical Society in 1859, states that the proportion of deaths throughout England, under all ordinary conditions of life, is believed to be one in six within the first year. To parallel this proportion of mortality, we must pass on to those dying between the eightieth and eighty-fifth years of life.

Dr. D. Meredith Reese, of New York, reported at the meeting of the American Medical Association in May, 1857, that nearly 50 per cent. of the total deaths in large cities occurred in children under five years of age. In New York City in the fifty years, 1804 to 1853, the whole mortality was 363,242, including still-births, and during this period 176.043 children under the age of five years died, nearly 49 per cent. of the entire number of deaths.

M. Bertillon stated before the Academy of Medicine of Paris that in a period of ten years there have been in France 9.700.000 births; of those born 1,500,000 died within the first year of life.

J. Maule Sutton, M.D., of London, in 1872, drew attention to the influence exerted on infant mortality by the social status of the parents. His figures give a mortality of 77 per thousand for children under one year of age in urban population; and a lower percentage for rural population. These same districts, excluding the upper-class births, gave a mortality of 158 per thousand. He studied the infant mortality among the children of the farmers of Devonshire and Norfolk, two agricultural counties. The infant mortality was 95 per thousand in the farming class; the rate among the children whose parents were not farmers was 130 per thousand.

John S. Parry, M.D., of Philadelphia, in 1871, quotes Dr. A. Jacobi as saying that "of 100 infants born alive to the gentry of England (1844) there died 20; to the working classes, 50. In the aristocratic families of Germany there died in four years 5.7 per cent.: among the poor of Berlin, 34.5 per cent. In Brussels the mortality, up to the fifth year, was 6 per cent. in the families of capitalists, 33 among tradesmen and professional people and 54 among the workingmen and domestics." Quoting De Villiers, he further writes that "the mortality among the children of the workingmen of Lyons is 35 per cent., and in well-to-do families and agricultural districts it is 10 per cent."

Dr. George Reid, in 1906, in London at the National Conference on Infant Mortality, in considering social status as an etiologic factor, divides the working class into three divisions: 1. Those among whom the proportion of employed, married and widowed females between eighteen and fifty years of age reached or exceeded 12 per cent. 2. Those among whom the proportion was 6 to 12 per cent. 3. Those among whom the proportion was below 6 per cent. The decades 1881 to 1890, 1891 to 1900, and four years 1901 to 1904 were studied. The infant mortality was always highest in group 1 and lowest in group 3. The average yearly infant mortality rates of group 1 were 195, 212 and 193; group 2, 165, 175, 156; group 3, 156, 168, 149. These statistics point out in no uncertain manner the fact that the infants of women employed in industrial and manufacturing plants during the time of their married life and motherhood are born into this world with less chance of battling with the problem of living than those whose mothers are not compelled to undergo this kind of work. The wives of farmers may and often do perform hard work, but it is done more or less out of doors, and not in the vitiated and contaminated atmosphere of a mill or factory.

Helle examined into the social status of the parents of 170 infants dying in Graz during 1903 and 1904: 112 infants who died had very poor parents; 49 children had poor parents; 9 had well-to-do parents, and no deaths occurred among the children of the rich: the percentage of the four classes being 65.9, 28.8, 5.3, 0. The general infant mortality in Graz has markedly decreased in the last twenty years, while the mortality due to gastrointestinal lesions does not show a marked diminution.

In Brün, a city of 110,000 inhabitants, the health statistics for fifteen years show that the general infant mortality during this time decreased very much, while that due to gastrointestinal lesions changed very little.

In Berlin, 1903, Newman investigated 2,701 infant deaths. Where the families were in one-room dwellings he found 1,792 deaths: in two-room dwellings, 754 deaths; in three-room dwellings, 122 deaths, and in larger dwellings, 43 deaths. It seems to be an established fact that the percentage of deaths among infants of the poor largely exceeds the mortality among the infants of the rich.

The hygienic surroundings of the infant—city or country life—are factors which play an important part in the sum total of infant mortality. In England and Wales, 77 per cent. of the whole population is urban; fifty years ago the population was equally divided between urban and rural districts. A considerable portion of this urban population lives in small towns, more closely resembling country than city life. In the year 1904, in England and Wales, 59.1 per cent. of the people lived in large towns of over 20,000 inhabitants; in 1801, only 16.7 per cent. lived in large towns.

It seems clear to me that this tendency to live more in large towns has much to do with the stationary infant mortality in England and Wales. City life means for the parents, often, long hours of work in a factory or mill; living in a small house in a small street, often poor food and not uncommonly dissipation of drink and perhaps immorality.

Epidemic diarrhea is mostly a disease of large towns and cities. It can be positively stated that geologic strata, character of soil and climate have nothing to do with infant mortality, nor is it entirely a question of poverty. Overwork, poor hygienic surroundings and poor housing seem to be two powerful factors causing infant deaths. Density of population *per se* may and does mean a good deal in causing deaths in infants. Urban England has a higher infant mortality than rural England. However, in first-class modern houses, the population may in a given area be dense, but the infant death rate may be small if other factors are present, as good hygiene, food, fresh air, healthful occupations and good social status.

If a town is distinctly industrial or manufacturing, the mortality invariably exceeds that of the town where the occupations have more of an agricultural tendency. Table 1, by Newman, shows the infant mortality in the county of Wiltshire, in which there are no large towns; it shows also that even under favorable conditions the city mortality exceeds the rural mortality; it also shows the high mortality of large towns, and the mortality of England and Wales, and rural England and Wales.

TABLE 1.—INFANT MORTALITY RATES IN WILTSHIRE AND ENGLAND AND WALES, 1900-1904.

Districts.	1900.	1901.	1902.	1903.	1904.
County of Wiltshire.....	94.0	93.7	97.23	85.63	95.99
Urban Districts (Wilts.)..	95.6	106.8	93.63	89.27	100.32
Rural Districts (Wilts.)..	115.7	83.8	99.89	82.76	92.52
England and Wales.....	154.0	151.0	133.0	132.0	145.0
Large towns in England..	172.0	168.0	145.0	144.0	160.0
Rural England and Wales..	138.0	137.0	135.0	118.0	125.0

In these two countries the highest infant mortality occurs in large towns: next, *in large towns and rural* districts; and the lowest mortality *in rural districts*.

TABLE 2.

Age.	Of 100,000 infants born, the number surviving at each age.			Annual death rates per 1,000 living in each successive interval of age.		
	Three rural counties: Herts., Wilts., Dorset.	Five mining and manufacturing counties: Staffs., Leic., Lancs., W. R. Yorks, Durham.	Three selected towns: Preston, Blackburn, Leicester.	The three rural counties.	The five mining counties.	The three towns.
At birth..	100,000	100,000	100,000	213	331	382
3 months	94,820	92,051	90,874	75	154	240
6 months	93,068	88,574	85,574	61	128	180
12 months	90,283	83,081	78,197	...	...	...

Table 2, by Newman, shows the remarkable difference in infant mortality in three agricultural counties, five mining and manufacturing counties, and three towns where textile industries and mining are largely followed.

This table covers the three years, 1889 to 1891, and shows that of 100,000 infants born in the rural counties 10,000 died; in the manufacturing counties 17,000 died, and in the manufacturing towns, 22,000. An important point to notice in this table is that the town rates are most in excess of the rural rates in the later months of the first year of life, showing clearly that the congenital conditions, atrophy and immaturity can be left out of consideration, and that the continuous ill effect of town life finally kills many children that have made a strong but useless struggle against their environment. Epidemic diarrhea plays a powerful part in this sacrifice of infant life in those towns where textile industries, manufacturing and mining flourish.

The deaths occurring during the first year of life are very unevenly distributed. This applies to all countries, and all statistics that I have been able to find prove this absolutely. The greatest percentage of deaths occurs in the first three months of life, and I believe that this percentage is increasing and not decreasing. In London during the years 1839 to 1844, 24,354 infants died during the first three months of life, an infant death rate of 68 per thousand. In the same city in the years 1898 to 1903, 56,963 infants died during the first three months of life, a death rate of 72 per thousand. According to Newman, there has been, in recent years, an increased percentage of infant deaths in England and Wales during the first three months, and a slight decrease in the percentage of deaths during the last six months of the first year. Newman asserts that infants die more from immaturity at the present time and that consequently more infants begin life with less vitality than in former periods. He also states: "Children under twelve months of age die in England to-day, in spite of all our boasted progress and in spite of an immense improvement in the social and physical life of the people, as greatly as they did seventy years ago."

The report of the Registrar General of England, for 1903, shows for England and Wales, 51.4 per cent. of infant deaths in the first three months; 19.9 per cent. in the second three months, and 28.7 per cent. in the last six months of the first year of life. In the year 1904, in Berlin, 53.6 per cent. of deaths of infants under one year occurred in the first three months. These deaths are, of course, distributed over the entire calendar year, and this observation consequently is not contradicted by the fact that the greatest number of deaths occur in the hot months. Births occur in each month with fair regularity, and the congenital conditions which contribute so largely to this mortality in the first few weeks of infant existence are consequently distributed with fair regularity throughout the year.

The added deaths from gastrointestinal disease, occurring as they do in great excess in the hot months, cause the great increase in the total infant mortality for the heated term.

The outside and home employment of mothers is a factor in infant mortality that was appreciated long since, and led Sir John Simon in 1856 to state that "infants perish under the neglect and mismanagement which their mothers' occupation implies." In Dundee a large percentage of the female population, of girls and married women, work in the jute and hemp factories. The labor is unskilled, the wages small and the hours 6 a. m. to 6 p. m. These women and girls are, as a class, subnormal in weight and general physical development: many of the children are born and raised in houses containing only one or two rooms, or in large tenements, where overcrowding and, usually, uncleanliness exist. In the ten years, 1893 to 1902, the infant mortality was 176 per thousand births; in 1904, out of 174 deaths, 125 were due to prematurity and immaturity, and over 49 per cent. of the deaths occurred in the first three months of life.

In England the Factory Act of 1901 states: "An occupier of a factory or workshop shall not knowingly allow a woman or girl to be employed therein within four weeks after she has given birth to a child." This is positive legislation of a far-reaching character. If the hygienic conditions of air, light and cleanliness were only adequately controlled by law in these mills or factories, and such provisions for sanitary surroundings as are needful were insisted on, much could be done to remove the injurious influences of this class of employment. Much has already been accomplished in this direction, but much still remains to be accomplished.

In Kearsley, a town of Lancashire, of 9,500 population, the infant death rate increased from 179 per thousand in 1894-1903 to 192 in 1903, and 229 in 1904; and this is due, according to J. C. Eames, M.D., medical officer of the town, to the town having "developed into more of a manufacturing district."

In Mulhouse, Mr. Dollfus, who owned a large cotton mill, established a fund to which all the married women subscribed, and he personally contributed. Each woman subscribing received from the fund sufficient for her support during the two months following her confinement. On resuming work at the end of this two months, she was granted time at mid-day to return home and care for her baby. This procedure alone reduced the infant mortality more than 50 per cent.

"In 1876 there was established in England a Society for Nursing Mothers. The object of the Society is to save the child's life by preserving the health of the mother. The mothers are cared for in institutions for several weeks before confinement, being well fed and housed; but what is more important is that, during the first year of the child's life, the mother is cared for wholly or in part, as it is necessary. A physician and nurse visit her at her house and give her the assistance she may require. Each month the child is weighed, carefully examined, and if sick is always cared for. The Society has cared for over forty thousand children, and the saving of infant life has been very great.

In Paris since 1904 the Coullet dining-rooms have gone one step ahead of anything done, as far as I know, in America. They have established restaurants in the poorer districts of Paris; any woman who is nursing a baby is given free of all cost two good meals each day. They feed the mother and the mother nurses the baby."

Since all empires are built of babies, unless a change in the trend of statistics of infant mortality shall take place, our future generations will fail to develop physically and numerically along the lines which are both normal and natural. Race suicide is not a theory, but a fact. France is actually facing slow extinction: its birth rate is smaller than that of any other European nation. The trouble and expense incident to the care and rearing of children does not appeal to all women of the present day; motherhood is not always synonymous with wifehood. A high birth rate is usually, but not invariably, linked with *prosperity*.

The foreign-born population of the United States has apparently a larger percentage of children than the native population, but this excess of fecundity is probably no more than that which usually is found in urban populations in poor districts, and the high infant mortality commonly found among this foreign element more than reduces its growth to the level of native-born Americans.

The Royal Commission in New South Wales, recently appointed, after much careful study and thought, decided that the main factor in the reduction of the birth rate was: "A diminution in fecundity and fertility in recent years due to the deliberate prevention of conception and destruction of embryonic life, and to pathologic causes consequent on the means used, and the practices involved therein." The remedy for this is not easy to apply; all nations are becoming more extravagant in their methods of living—automobiles and babies may be incompatible possessions—if we have one, we must often renounce the other.

Infanticide by neglect or intention undoubtedly causes the death of many hundred infants each year. Women in the poorer walks of life should be urged to nurse their children, entirely or in part, as long as possible. Part breast and part bottle feeding is much better than all bottle feeding; weaning should never be done prematurely unless by the advice of a physician. Women with illegitimate children should be kept in the hospital and made to nurse their babies until after the third month. After this age, the child is better able to withstand the perils of artificial food, and the mother, from her association with the child, has perhaps become sufficiently fond of it to make an effort to protect its life. If a child is born, and no one is with the mother at the time of its birth, the danger of death at the time of delivery is greatly increased, and the secrecy of birth may induce the mother, under certain conditions, to destroy the child's life.

The giving of opiates to children, either in the form of paregoric or of a soothing syrup, is pernicious and should always be absolutely forbidden. Overlaying, either by accident or design, is in certain portions of this and other countries, very common; an infant, of course, should never sleep in the same bed with its mother.

Infant life insurance and burial clubs cause the death by neglect of many; statistics prove that a much greater number of children insured and in burial clubs die than of those children in the same cities and towns living under exactly similar conditions. Coroners' inquests should be rigid and impartial, and if there is any question or possibility of infanticide, the case should be thoroughly investigated and proper punishment imposed on the guilty. Of 864 children dying under one week of age in Philadelphia, inquests showed, according to Parry, that 210 died from "unknown causes," 293 from "asphyxia," 94 "still-born," 62 from "exposure and neglect" and 22 from "want of medical attention." In these cases the coroner's physician believed that the majority of those which he examined were murdered.

The death rate per thousand is well known to be much higher among illegitimate than among legitimate children. An interesting fact, which is perhaps not always appreciated, is that in large cities the death rate among illegitimate infants is much greater than in country districts. In Glasgow in 1873 the death rate for illegitimate infants was 293 per thousand; for legitimate infants, 154 per thousand. In London in 1902 the death rate of illegitimate children was almost twice as great as the death rate of legitimate children. The infant death rate of London, as a whole, exceeds the rural infant death rate by about 20 per cent. The deaths among illegitimate infants in London exceeds the rural death rate among illegitimate infants by over 50 per cent.

According to Dr. Norman Kerr, in 1894 the proportion of female inebriety in England had increased greatly in the recent years preceding 1891. He asserts that prison experience shows a distinct increase of drinking to excess among women. According to the annual death rates from alcoholism in England and Wales, per million living, from the year 1875 to 1904, the mortality due to inebriety is distinctly increasing. The average for every five years from 1875 to 1904 was: 1875 to 1879, 25 deaths per million living; 1880 to 1884, 29 deaths per million; 1885 to 1889, 36 deaths; 1890 to 1894, 50 deaths; 1895 to 1899, 58 deaths; 1900 to 1904, 71 deaths. In studying these figures it seems as if there can be no reasonable doubt that alcoholism is increasing among the women of England and Wales, although some allowance should probably be made for the more accurate diagnosis of recent years. Dr. Scott, quoted by Newman, believes that alcoholism is increasing among the women of Scotland.

Alcohol is a distinct poison to children, but the number of deaths caused by the giving of alcohol direct in any form to children is certainly very small in the United States. It has, however, been clearly shown that suffocation in bed and overlaying is twice as common on Saturday as any other night in the week; and the prevalence of drinking among the poor on that night is proverbial. An alcoholic mother rarely supplies her baby with a good breast-milk, and what is perhaps more important is the fact that the milk from such a mother may even contain alcohol. Alcoholism among women is perhaps increasing in America, but it is surely less common than in England.

Systematic nursing and medical care are wonderful aids in the prevention of infant mortality, and account largely for the difference between the infant mortality of the rich and poor. Home treatment, or perhaps better say maltreatment, of very young infants often destroys what little chance of life the infant would otherwise have had. The poor and ignorant classes often call "the doctor" too late to save the patient.

It is not an easy task to form an accurate idea of how many or what proportion of infant deaths are due to congenital causes and those diseases which, if not actually congenital, still leave the child more susceptible to their development than is the child whose parents are free from such diseases. Herbert M. Rich, in 6,866 deaths under one year of age, found 23.2 per cent. to be due to malformations, congenital debility and premature birth. Syphilis is certainly responsible for many premature and early deaths. In London and in most English cities the mortality from prematurity and atrophy is about 45 per thousand, these deaths almost all occurring in the first three months of life. Smallpox, malaria, typhoid fever and tuberculosis are all diseases that may and do exert an influence on the infant. Lead, mercury and phosphorus may exert a distinct antenatal effect, and the influence of alcohol has already been alluded to. In fact, any and all toxemias may influence the child during intrauterine life.

Gastrointestinal diseases are not only the most common diseases of infancy and childhood, but they are also responsible for more deaths than any other class of diseases. Infantile diarrhea is especially apt to occur in the first year of life, although very common in children under two years of age. Hot weather, bad feeding and poor hygiene are the chief etiologic factors. It is often seen in epidemics, is very dangerous, and is the common cause of deaths among infants in cities in summer. Epidemics have often been traced to infected milk, although one must remember that milk may be infected at the farm, in transit or by the consumer.

Cases of this disease are rare among the rich, compared to the number one sees among the poor; they are rare in the country, compared with the number seen in the cities. The diarrheal death rate is, as a rule, highest in those countries where the infant mortality is greatest. Russia has the highest infant death rate of any European country, and Germany ranks second in the percentage of infant deaths. Taking 42 of the largest German cities, in the years 1904-5-6, there occurred 67,633 deaths of infants under one year of age; of these 28,422 were due to gastrointestinal disease.

In certain American cities it has recently been clearly proved in many instances that this enormous summer death rate, due to the diarrheal diseases, can be reduced. Clean milk must be provided for the poor at a nominal cost, and this milk must be properly modified for children of different ages and conditions. A campaign of education among the mothers of this poor class must be carried on persistently and continuously; visiting nurses must be supplied; and fresh air and improved hygiene must be insisted on. It is not asserting too much to say that a reduction of 50 per cent. in summer infant mortality may be accomplished by these means.

It is an old truth thoroughly appreciated by American physicians that breast-fed infants do well, whether they belong to the rich or the poor, but I do not believe that it is appreciated how great a difference exists in the infant mortality between breast-fed and bottle-fed infants. In the year 1903, 4,075 infants died in Munich; of these 83 per cent. were artificially fed. In Berlin since 1885 the census gives the character of the feeding of all living children. Taking the five years, 1900 to 1904, only 9 per cent. of the deaths occurred in breast-fed babies, and Budin has shown that only about 9.5 per cent. of the infant mortality in Paris occurs in breast-fed children. Of course, breast feeding is usually associated with other favorable factors, and bottle feeding often combined with many unfavorable associated conditions, but the figures are truly startling.

In war times the infant mortality often declines in manufacturing centers, in spite of the fact that the general mortality rate increases. During the siege of Paris, 1870-71, it is claimed the general mortality rate doubled, yet the infant mortality rate declined 40 per cent. Under such conditions infants do not die, and why? In times of war or great industrial depression the poor woman, having no work, stays at home and nurses her baby, and the child lives. In prosperity she works all day, gives her baby the bottle, and it dies.

It is both interesting and instructive to note that any considerable variation in the infant death rate in any locality is almost invariably linked with a corresponding change in the diarrheal death rate, the mortality from other causes changing, as a rule, comparatively little.

The factors contributing to infant mortality are so many and varied and the difficulties in controlling these harmful influences are so great that at the present day one is forced to admit that, while the preventable death rate is very large, still among the poor there must be a large necessary death rate.

Several years ago the mayor of Huddersfield, England, offered a gift of $5 to every child born in his town that lived to the age of twelve months. All classes, rich and poor, were included; the mortality in the Huddersfield district was immediately reduced more than 50 per cent.

In Yonkers, N. Y., a campaign was undertaken in 1894, having as its object the reduction of the infant mortality rate. The physicians of Yonkers, aided by the public press, established milk stations, and instituted and carried out a campaign of education among mothers. A sanitary inspection of the tenement district was adopted and nurses were appointed to visit the sick. The Board of Health also passed a regulation requiring in all new tenements a sufficient amount of light and air. The deaths from digestive diseases were reduced more than 50 per cent. Dr. S. E. Getty believes that, of all the means employed, the most important was the establishment of the milk dispensaries.

That a general propaganda against infant mortality has been vigorously pushed all over the United States is shown by the census, 1880 and 1890. In 1880 the general infant mortality of the United States was 246 per thousand; in 1890 it had fallen to 159 per thousand, and during the same period it is gratifying to note that the infant mortality in cities decreased from 303 to 184 per thousand. This is surely a record to be proud of.

In France, 1874 to 1893, the average infant mortality was 167 per thousand. Ten years later, in 1903, it was only 137 per thousand. In Paris it was only 101; wonderful Paris has the smallest birth rate and the lowest death rate of any large European city.

The physicians of the United States have accomplished much in the last ten years, and yet when we consider how remarkably successful have been the efforts directed to save infant life, should we not, as the representative body of the American profession, feel chagrined that we have not accomplished more? Certainly 50 per cent. of all infant deaths at the present day are preventable.

Hospitals for infants have been established all over the world,. and we are establishing new ones almost daily, and yet some physicians question whether they do good or harm. Going gack to the year 1871, we find that 29.82 per cent. of all the children born in Philadelphia died before the end of their first year. In the same year, in the foundling ward of the Philadelphia Hospital, 73.65 per cent. died. The death rate among the foundlings was 43.83 per cent. more than among infants of the same age of Philadelphia. These children were, as a rule, in fair health on entering the hospital. Of these infants, 74.69 per cent. died from diarrheal diseases, and only 25.31 per cent. from all other causes. At this period, the records of the foundlings' ward in the Philadelphia Hospital were about the same as the records from the foundling hospitals in other large American cities. Dr. A. Jacobi, at this date, had the courage to point out publicly the enormous mortality in the foundling institutions of New York, and as a consequence was asked to resign from the hospital staff.

What is the condition in our infant hospitals at the present day? My personal opinion is that in the modern infant hospital, where the air space is ample, and the windows are kept open day and night; where the milk is the best and the milk-room thoroughly up to native population, but this excess of fecundity is probably no more than that which usually is found in urban populations in poor districts, and the high infant mortality commonly found among this foreign element more than reduces its growth to the level of native-born Americans.

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Alcohol is a distinct poison to children, but the number of deaths caused by the giving of alcohol direct in any form to children is certainly very small in the United States. It has, however, been clearly shown that suffocation in bed and overlaying is twice as common on Saturday as any other night in the week; and the prevalence of drinking among the poor on that night is proverbial. An alcoholic mother rarely supplies her baby with a good breast-milk, and what is perhaps more important is the fact that the milk from such a mother may even contain alcohol. Alcoholism among women is perhaps increasing in America, but it is surely less common than in England.

Systematic nursing and medical care are wonderful aids in the prevention of infant mortality, and account largely for the difference between the infant mortality of the rich and poor. Home treatment, or perhaps better say maltreatment, of very young infants often destroys what little chance of life the infant would otherwise have had. The poor and ignorant classes often call "the doctor" too late to save the patient.

It is not an easy task to form an accurate idea of how many or what proportion of infant deaths are due to congenital causes and those diseases which, if not actually congenital, still leave the child more susceptible to their development than is the child whose parents are free from such diseases. Herbert M. Rich, in 6,866 deaths under one year of age, found 23.2 per cent. to be due to malformations, congenital debility and premature birth. Syphilis is certainly responsible for many premature and early deaths. In London and in most English cities the mortality from prematurity and atrophy is about 45 per thousand, these deaths almost all occurring in the first three months of life. Smallpox, malaria, typhoid fever and tuberculosis are all diseases that may and do exert an influence on the infant. Lead, mercury and phosphorus may exert a distinct antenatal effect, and the influence of alcohol has already been alluded to. In fact, any and all toxemias may influence the child during intrauterine life.

Gastrointestinal diseases are not only the most common diseases of infancy and childhood, but they are also responsible for more deaths than any other class of diseases. Infantile diarrhea is especially apt to occur in the first year of life, although very common in children under two years of age. Hot weather, bad feeding and poor hygiene are the chief etiologic factors. It is often seen in epidemics, is very dangerous, and is the common cause of deaths among infants in cities in summer. Epidemics have often been traced to infected milk, although one must remember that milk may be infected at the farm, in transit or by the consumer.

Cases of this disease are rare among the rich, compared to the number one sees among the poor; they are rare in the country, compared with the number seen in the cities. The diarrheal death rate is, as a rule, highest in those countries where the infant mortality is greatest. Russia has the highest infant death rate of any European country, and Germany ranks second in the percentage of infant deaths. Taking 42 of the largest German cities, in the years 1904-5-6, there occurred 67,633 deaths of infants under one year of age; of these 28,422 were due to gastrointestinal disease.

In certain American cities it has recently been clearly proved in many instances that this enormous summer death rate, due to the diarrheal diseases, can be reduced. Clean milk must be provided for the poor at a nominal cost, and this milk must be properly modified for children of different ages and conditions. A campaign of education among the mothers of this poor class must be carried on persistently and continuously; visiting nurses must be supplied; and fresh air and improved hygiene must be insisted on. It is not asserting too much to say that a reduction of 50 per cent. in summer infant mortality may be accomplished by these means.

It is an old truth thoroughly appreciated by American physicians that breast-fed infants do well, whether they belong to the rich or the poor, but I do not believe that it is appreciated how great a difference exists in the infant mortality between breast-fed and bottle-fed infants. In the year 1903, 4,075 infants died in Munich; of these 83 per cent. were artificially fed. In Berlin since 1885 the census gives the character of the feeding of all living children. Taking the five years, 1900 to 1904, only 9 per cent. of the deaths occurred in breast-fed babies, and Budin has shown that only about 9.5 per cent. of the infant mortality in Paris occurs in breast-fed children. Of course, breast feeding is usually associated with other favorable factors, and bottle feeding often combined with many unfavorable associated conditions, but the figures are truly startling.

In war times the infant mortality often declines in manufacturing centers, in spite of the fact that the general mortality rate increases. During the siege of Paris, 1870-71, it is claimed the general mortality rate doubled, yet the infant mortality rate declined 40 per cent. Under such conditions infants do not die, and why? In times of war or great industrial depression the poor woman, having no work, stays at home and nurses her baby, and the child lives. In prosperity she works all day, gives her baby the bottle, and it dies.

It is both interesting and instructive to note that any considerable variation in the infant death rate in any locality is almost invariably linked with a corresponding change in the diarrheal death rate, the mortality from other causes changing, as a rule, comparatively little.

The factors contributing to infant mortality are so many and varied and the difficulties in controlling these harmful influences are so great that at the present day one is forced to admit that, while the preventable death rate is very large, still among the poor there must be a large necessary death rate.

Several years ago the mayor of Huddersfield, England, offered a gift of $5 to every child born in his town that lived to the age of twelve months. All classes, rich and poor, were included; the mortality in the Huddersfield district was immediately reduced more than 50 per cent.

In Yonkers, N. Y., a campaign was undertaken in 1894, having as its object the reduction of the infant mortality rate. The physicians of Yonkers, aided by the public press, established milk stations, and instituted and carried out a campaign of education among mothers. A sanitary inspection of the tenement district was adopted and nurses were appointed to visit the sick. The Board of Health also passed a regulation requiring in all new tenements a sufficient amount of light and air. The deaths from digestive diseases were reduced more than 50 per cent. Dr. S. E. Getty believes that, of all the means employed, the most important was the establishment of the milk dispensaries.

That a general propaganda against infant mortality has been vigorously pushed all over the United States is shown by the census, 1880 and 1890. In 1880 the general infant mortality of the United States was 246 per thousand; in 1890 it had fallen to 159 per thousand, and during the same period it is gratifying to note that the infant mortality in cities decreased from 303 to 184 per thousand. This is surely a record to be proud of.

In France, 1874 to 1893, the average infant mortality was 167 per thousand. Ten years later, in 1903, it was only 137 per thousand. In Paris it was only 101; wonderful Paris has the smallest birth rate and the lowest death rate of any large European city.

The physicians of the United States have accomplished much in the last ten years, and yet when we consider how remarkably successful have been the efforts directed to save infant life, should we not, as the representative body of the American profession, feel chagrined that we have not accomplished more? Certainly 50 per cent. of all infant deaths at the present day are preventable.

Hospitals for infants have been established all over the world, and we are establishing new ones almost daily, and yet some physicians question whether they do good or harm. Going gack to the year 1871, we find that 29.82 per cent. of all the children born in Philadelphia died before the end of their first year. In the same year, in the foundling ward of the Philadelphia Hospital, 73.65 per cent. died. The death rate among the foundlings was 43.83 per cent. more than among infants of the same age of Philadelphia. These children were, as a rule, in fair health on entering the hospital. Of these infants, 74.69 per cent. died from diarrheal diseases, and only 25.31 per cent. from all other causes. At this period, the records of the foundlings' ward in the Philadelphia Hospital were about the same as the records from the foundling hospitals in other large American cities. Dr. A. Jacobi, at this date, had the courage to point out publicly the enormous mortality in the foundling institutions of New York, and as a consequence was asked to resign from the hospital staff.

What is the condition in our infant hospitals at the present day? My personal opinion is that in the modern infant hospital, where the air space is ample, and the windows are kept open day and night; where the milk is the best and the milk-room thoroughly up to date; where the ratio of nurses to patients is not less than one to five; where the sick are promptly isolated from the well, and "mothering" is understood—that in such a hospital the physician is an optimist and not a pessimist.

Many of the infants will die, but most of them will live. If one considers that many of those who die are "weaklings" on admission, and that the greatest proportion of deaths occurs in the first three months of life, one is apt to believe that the best of the modern infant hospitals are worthy institutions and should be supported. Much depends on the character of the feeding, but here as ever, the truth that breast feeding is better than bottle feeding is well exemplified.

Of 300 infants admitted to the Dresden Children's Polyclinic in 1900 to 1901, there were 53 deaths. All the deaths, 53 in number, were among the bottle-fed babies. Among 93 breast-fed babies, during the same period, in the same hospital, there was not a death. Breast-feeding is surely a powerful measure with which to combat death.

According to the census of 1900, the infant mortality per 1,000 in the United States was in those states where registration was in force:

	Per 1,000 births.
District of Columbia	274.5
Rhode Island	197.9
Massachusetts	177.8
New York	159.8
Connecticut	156.8
Maine	144.1
New Hampshire	172.0
New Jersey	167.4
Vermont	122.1
Michigan	121.3

The census of 1900 shows the returns for infant mortality from many cities and towns of the United States. The infant mortality in some of these cities is very high, over 400 per 1,000 in Charleston, S. C. A number of them show a mortality over 300, and over 100 cities exhibited an infant mortality above 175 per 1,000.

The important point to be decided is as to the influence which has been exerted on this infant death rate in recent years. Have we been able to reduce in any appreciable degree this great and unnecessary waste of infant life? A careful study will show that a great saving of life has been accomplished in recent years, and much will surely be accomplished in the future.

In 1903 the infant mortality of France was 137. In the previous twenty years it was 167, and yet this death rate ought to be still more greatly reduced, for we know that Ireland has an infant death rate below 100. Norway in 1902 had an infant death rate of 75, and Sweden 107 per 1,000.

Of all European countries, Russia has the highest infant death rate, 270 per 1,000. Germany has the next highest mortality, averaging in recent years a little over 200. Medical science and skill have reached a very high plane in both these countries, and infant mortality has been greatly reduced during the last thirty years. It is to be hoped that the useless waste of life in these two countries will quickly be much more distinctly diminished, and it is believed they will soon show as great a reduction as has occurred in France.

There has been a great decrease in the proportion of infants dying under one year of age in the United States during the last twenty years. The infant mortality for the United States in 1880 was 246 per 1,000; in 1890 it had fallen to 159 per 1,000. During the same period the mortality in the cities of the United States fell from 303 to 184 per 1,000. In New York City in 1891, the death rate in children under 5 years of age was 96.6 per 1,000; in 1896 it had fallen to 77.5 per 1,000, and in 1900 the mortality under 5 years of age was only 67 per 1,000.

Many figures might be quoted showing that in recent years infant mortality has distinctly lessened. In London in January, 1908, the deaths of infants under 1 year of age to 1,000 births, was 115. According to George B. Mangold, U. S. Department of Commerce and Labor, the infant mortality in New York City in 1891 was 241.9 per 1,000; in 1900 it was 191.7 per 1,000; and in 1906 it was 167.8 per 1,000. The mortality has gradually declined. In New York City the death rate of children under 5 years of age was 96 per 1,000 in 1891; in 1901, it was 54 per 1,000. In the same community the deaths from measles, scarlet fever and diphtheria have become distinctly less; and diarrheal diseases in small children have decreased 62 per cent. since 1881.

School nurses are now provided and medical inspection of schools is now well recognized and practiced in many of our large cities. According to Dr. W. M. L. Coplin: "A necessity for medical attention was detected in 27,481 children in the schools of Philadelphia in 1905, and 31,544 children in 1906." Dr. A. C. Abbott, chief of the bureau of health of Philadelphia, shows that in the years 1903-5 a distinct decrease in the infant death rate occurred. Philadelphia shows a very decided decrease in infant mortality since 1897.

Thomas A. Buckland, city chemist for St. Louis, states that there has been a decrease in infantile mortality since 1904. W. Ernest Wende, M.D., health commissioner of Buffalo, states that infant mortality is decreasing in that city. Samuel E. Allen, health officer of Cincinnati, states the proportion of deaths of children under 2 years of age to the total mortality has decreased considerably since 1886. In the year 1886 it was 32.56 per cent.; in the year 1906 it had decreased to 21.92 per cent.

Milwaukee and Minneapolis and the nine largest cities in the State of New York, according to George W. Goler, M.D., show a decrease in infant mortality.

The following have occurred to me as being important factors in lessening infant mortality:

Abatement of nuisances.
Milk inspection; milk dispensaries; visiting nurses.
Free antitoxin.
Improved sanitation.
Good food.
Education of girls and married women in the duties and requirements of motherhood.
Maternity fund in all industrial establishments where married women are employed.
Care of poor pregnant women before and after confinement.
Laws carefully protecting all children who are cared for by private individuals, apart from their parents; rigid enforcement of these laws.
Elementary principles of hygiene taught in all schools, public and private.
Nursing of all babies as far as possible, by their mothers.
Sending children to the country in summer.
Pasteurizing milk during the hot months.
Farming out, under proper medical supervision, of foundlings and institution infants, and the appointment of nurses to visit these infants regularly.

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DEVELOPMENTAL DEFORMITIES OF THE CRYSTALLINE LENS.*

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In the observation brought forward in this paper I propose to show how several forms of congenital cataract are the outcome of arrests of development in the lens at different stages in its formation.

I am, naturally, aware that to attribute a condition to an arrest of development offers only a partial explanation of its etiology, leaving the cause of the arrest still to be accounted for. I think, however, I shall be able to demonstrate that a recognition of the stage at which the arrest of development has taken place, though we do not know the actual cause of the arrest, helps to a clearer insight as to the meaning of the appearances presented by congenital cataracts, and also affords valuable hints as to the most suitable operative measures to employ in their treatment.

For descriptive purposes I propose to summarize the development of the lens into the three following stages, and then to point out how certain arrests of development occur during each stage:

1. The down growth of a fold of cuticular epiblast, which is separated in the form of a hollow vesicle from the rest of the surface epiblast by intruding mesoblast, and becomes surrounded by a hyaline capsule.

2. The lengthening out of the cells composing the posterior layer of the vesicle until they fill its entire cavity. These are the first formed lens fibers and exist as the most central part of the fully developed lens.

3. The proliferation of the cells lining the anterior capsule and their transformation at the sides of the lens into lens fibers. A transformation which is effected by their lengthening out anteriorly and posteriorly, so as to encircle the fibers developed from the posterior layer, lines of sutures resulting where their ends come in contact. This laying on of fresh fibers laterally goes on throughout life, but its rapidity is lessened as life advances by the increasing intracapsular tension tending to check the proliferative activity of the cells.

I. The arrests of development which I have to describe during the first stages have mainly to do with the capsule of the lens.

The hyaline capsule of the lens was at one time regarded as a structure of mesoblastic origin and the product of the fibro-vascular sheath which encircles the lens in fetal life. There is, however, considerable evidence to show that it is really epiblastic in origin and formed as a kind of secretion from the epithelial cells lining it.

This evidence may be considered as embryologic, anatomic, chemical, experimental and pathologic.

Kölliker and Kessler pointed out that the capsule is present before the fibro-vascular sheath makes its appearance. We find also that the anterior and lateral parts of the capsule continue to grow and thicken with age, long after the vascular sheath has disappeared.

The anterior and lateral parts which are lined by epithelial cells throughout life are markedly thicker than the posterior, which is only lined by cells for a short time during early fetal life. The anterior capsule in the adult lens has been estimated as 0.016 mm. in thickness and the posterior as 0.008 mm.

Though classed as an elastic membrane, it is found not to resemble yellow elastic tissue of undoubted mesoblastic origin, either in its chemical composition or in its staining reactions. In these particulars it has close affinity to the basement membranes of glands, which it is very probable are also the product of epithelial cells.

Schirmer[1] has shown that after experimental wounds of the anterior capsule the gap first becomes closed by some rows of cells resulting from proliferation of the capsular epithelium beneath a layer of fibrin. Later a new hyaline layer makes its appearance across the space left by the retraction of the two extremities of the wounded capsule. This new hyaline layer is evidently the product of the epithelial cells on its inner surface and is formed quite independently of any cells of mesoblastic origin.

In connection with anterior polar cataracts new formations of a layer of hyaline capsule are sometimes met with beneath the opacity. A study of sections from a series of lenses with this form of cataract, which vary in the length of time which has elapsed since its formation, clearly establishes the epithelial origin of these new hyaline layers.

Anterior polar cataract most frequently occurs as a sequel of ulceration of the cornea in infancy; it may, however, be congenital. I have examined anatomically a lens with this form of opacity from an eye with congenital aniridia, in which the cornea was perfectly clear and healthy and had never been inflamed or ulcerated. In this specimen the microscopic appearances of the affected area were precisely similar to those seen in anterior polar cataracts resulting from corneal ulceration.

I have published[2] a description of the histologic appearances of anterior polar cataract in six eyes in which the time which had elapsed from the formation of the opacity to that at which the eye was excised ranged from six weeks to twenty-one years.

In two, in which the opacity was of only six weeks and eight weeks formation, respectively, the changes found consisted in some disintegration of the lens fibers at the anterior pole and proliferation of the cells lining the anterior capsule in that situation. As to which is the primary of these two processes there has been much discussion.

The one theory holds that the primary factor is the proliferation of capsule cells, excited into an excess of activity by the neighboring inflammatory condition of the cornea. It affords, however, no explanation of the occurrence of congenital anterior polar cataract, which, as I have already pointed out, may be present in an eye where there was no history of any inflammation having occurred, and where, after the most careful microscopic examination, not the least trace of any past inflammatory trouble can be detected.

The other theory, in support of which I have myself published some observations,[3] assumes the disintegration of the lens fibers to be the first change. This disintegration apparently results from a localized disturbance in nutrition due to contact of the lens at its most prominent part, the anterior pole, with the inflamed and swollen cornea. In an infant's eye, with its exceedingly shallow anterior chamber and very globular lens, such contact is easily affected. The disintegration thus brought about in the lens substance causes a lowering in the intracapsular pressure in the affected area, so removing the restraining influence which the intracapsular pressure exerts on the proliferating activity of the capsular epithelium and allowing of its irregular multiplication.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908. For lack of space part of the article is omitted. The complete article appears in the Transactions of the Section and in the author's reprints. A copy of the reprint will be sent by The Journal of the American Medical Association on receipt of a two cent postage stamp.

[1] Arch. f. Ophth., xxxv, 220.

[2] Tr. Ophth. Soc. U. K., xii, 89.

[3] Tr. Ophth. Soc. U. K., xviii, 124.

The fact that similar changes in the lens are excited by contact with it of a sarcomatous growth of the ciliary body favors this theory. The congenital anterior polar cataracts can be accounted for in accordance with it by imagining the apposition of the lens and cornea, which normally exists for a part of fetal life, to have been abnormally prolonged after the disappearance of the fibrovascular sheath which supplies the lens with nutriment in its early stages.

The mass of proliferated capsular epithelium, which is at first met with in an anterior polar cataract, gradually becomes converted into a condensed mass of tissue showing only a slight lamination and studded here and there with a few flattened elongated epithelial cells which have retained their nuclei. Beneath such a mass epithelial cells, continuous with those lining the capsule in the unaffected parts, gradually insinuate themselves, separating it off from the adjacent lens substance. In an anterior polar cataract of seven months formation I found a continuous layer of such cells on the posterior surface of the laminated mass, at the margins of which the hyaline capsule and its lining epithelium appeared to part company, the former passing in front and the latter behind.

In the course of time, in front of the epithelial cells which pass behind the laminated mass, a hyaline layer, similar in all respects to the lens capsule, makes its appearance. In an anterior polar cataract of eleven years formation I found the laminated mass contained between two unbroken layers of hyaline capsule, both of which were continuous with the capsule in the unaffected region at the sides, the posterior of the two being alone lined by epithelium. That this new hyaline layer of capsule is the product of the epithelial cells which have crept in beneath the laminated mass seems to me an irresistible conclusion.

Anterior polar cataract occurs most frequently in infancy long before the lens has attained its maximum dimensions and density. As age advances new lens fibers are laid on laterally, which, extending backward and forward, separate what were for a time the most peripheral fibers away from the capsule. As already stated, in anterior polar cataract, besides the proliferation of the capsule cells, there is some degeneration of the lens fibers. These are at the extreme periphery of the lens at the time the degeneration takes place; as new lens fibers are developed the disintegrated area and the laminated mass formed from the proliferated cells gradually become separated by them, so that in an anterior polar cataract of long duration two opacities are often seen, the one at the surface of the lens, the outcome of the proliferated epithelium, and the other some little depth down, due to degenerated lens fibers.

In some of the cases seen clinically with two opacities the separation has not been complete, a thin band cementing them together, so that they presented much the appearance of a collar stud. Presumably in such cases the apposition of the ends of the lens fibers which have grown forward from the sides has not been completely effected, some granular material having remained interposed in the line of suture.

Taking it now that the evidence brought forward suffices to show that the lens capsule is the product of the epithelial cells lining it, it is obvious that the posterior part of the capsule has only a very short time in which it can be formed, for the cells which compose the posterior layer of the lens vesicle soon lengthen out into lens fibers, and then become separated from the lens capsule by the growth around them of the new lens fibers laid on laterally, the posterior capsule for the remainder of life being devoid of any cellular lining. Under these circumstances it is not surprising that defects in the development of the central part of the posterior capsule should occasionally be met with, causing it to be unduly thin or absent altogether.

Several cases have now been recorded in which a congenital gap in the posterior capsule of the lens has been found. The first of the sort so far as I am aware was in a specimen which I described and pictured in 1892.[4]

Two cases, in some respects very similar to this, were described by Parsons in 1902,[5] and he has kindly allowed me to have drawings made from his sections of them.

Having from these cases become aware of the not uncommon association of these defects, I was led to reexamine sections which I had previously prepared with persistent hyaloid artery and atypical development of the vitreous. I found that in those in which I had sections passing across the center of the posterior pole of the lens a gap in the posterior capsule was present. In those in which I had only sections passing through the side of the lens there was some rucking of the posterior capsule suggestive of the possible presence of a defect in the center.

So frequent is a congenital formation of the fibrous tissue in the vitreous met with in association with a defect in the posterior capsule of the lens that I am inclined to think that the latter is the primary condition and the former a kind of compensatory change.

These cases with a congenital defect in the posterior capsule of the lens with fibrocellular atypical vitreous filling the gap or extending forward into the lens substance are not only of considerable pathologic and embryologic interest but also of clinical importance.

In the first case I have mentioned, though clinically a gray reflex was seen at the back of the lens, the lens itself appeared clear. Except for some cortical opacities the same was true of the second case. Microscopic examination of the lenses in both these cases, however, showed extensive changes, which could not be entirely accounted for by the hardening reagents. Both these eyes were removed very early in life, at 9 months and 10 weeks, respectively. I think there can be little doubt that if they had been left some months longer the whole lens in each case would have become opaque.

I have recorded a case[6] in which presumably there was a similar condition behind the lens where such a change was observed to take place.

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[4] Roy. London Ophth. Hosp. Rep., xiii, 363.

[5] Tr. Ophth. Soc. U. K., xxii, 253, 258.

[6] Roy. London Ophth. Hosp. Rep. xiii, 365.

In these cases, if the lens substance in front of the atypically developed vitreous became opaque before birth, or if the patient was not presented for examination until it had become opaque, the condition would be diagnosed as one of complete congenital cataract.

If a discission operation was performed some lens-matter might be liberated, exposed to the action of the aqueous and become absorbed, but the fibro cellular tissue at the back would be unaffected by the operation and would remain as a dense opaque membrane which it would be found very difficult to tear or cut with a needle. If its removal was attempted by traction with a pair of forceps, vitreous would be certainly drawn forward with it and some would probably escape, seeing that the membrane is attached to and really part of the vitreous. If it were to be incised with a pair of iridotomy scissors the gap formed would remain as a simple linear incision and show no tendency to gape, the membrane being such a tough and inelastic structure.

All those who have had experience of operative procedures on congenital cataracts will recognize, in the above, happenings with which they are familiar.

In two cases, shown to me by my friend, Mr. G. W. Thompson, where a tough membrane which could not be torn with a needle was encountered in connection with congenital cataract, the opaque tissue had ultimately been displaced downward out of the central part of the pupillary area. A good clear opening in the line of vision had been thus obtained through which the patient could see and through which a clear ophthalmoscopic view of the fundus could be obtained. In both these cases a slender fibrous cord was detected passing forward through the vitreous from the center of the optic disc to the back of the displaced opaque membrane, evidently the remains of a central hyaloid artery.

These two cases afford confirmatory evidence that the tough resistent membranes met with in congenital cataracts are frequently due to a malformation of the anterior part of the vitreous. They also, I think, serve to indicate the way in which such cases had best be dealt with. In them a very satisfactory operative result had been obtained by the somewhat accidental displacement downward of the opaque tissue. I would advocate that such displacement or couching, of the tough membrane should be deliberately carried out. I think in most cases of congenital cataract it is first desirable to perform a needling in the usual way, it serves as an exploratory procedure enabling the operator to judge the consistency of the tissue with which he has to deal, it exposes to the solvent action of the aqueous humor whatever lens matter there may be present. If, as the result of the preliminary needling operation, it is found that there is a tough substance in the pupillary area which is not an anterior polar cataract then as a subsequent procedure I would suggest that the operation for its displacement should be performed.

In some of the cases I have mentioned with a congenital gap in the posterior capsule of the lens there has been an extension forward of mesoblastic fibrocellular tissue into the lens.

I now come to a class of cases in which through a gap in the posterior capsule of the lens there was a protrusion backward of the lens substance into the vitreous; a class of cases which are known as posterior lenticonus.

For our knowledge of the anatomic changes in posterior lenticonus we are largely indebted to Carl Hess.

An excellent little monograph, recording some fresh cases and summarizing the literature of the subject, was published by André Patry.[7]

The views put forward as to the cause of posterior lenticonus are classed by Patry under two headings.

1. The rupture of the posterior capsule (as he terms it) is due to an increased size of the lens.
2. The rupture and deformity of the lens are both due to traction produced by the hyaloid artery.

Through the kindness of my friend, Mr. Mayou, I have had the opportunity of examining the sections of two microphthalmic eyes[8] showing posterior lenticonus.

Neither of the two theories already referred to adequately explain the causation of posterior lenticonus when all the recorded cases are considered together, and I would suggest that a better explanation is to be found *in regarding the gap in the posterior capsule as a defect in development rather than a rupture.* The fact that Hess[9] has found and pictured the condition in a chicken embryo 150 hours old is, I think, strongly in support of this view. As I have pointed out, the development of *the capsule at the posterior pole has to be completed* exceedingly early and should it fail to form there is no means in later life by which the defect can be made good.

The gradual growth of the lens would cause such a gap to expand, and if not too much blocked up by fibrous tissue formation in the anterior part of the vitreous the lens fibers at the posterior pole would protrude through it, forming the conical projections which are met with.

In some cases the faulty development appears not to result in a complete absence of the capsule at the posterior pole, only producing an undue thinness and weakness, which on growth of the lens results in a bulging outward in that region.

Of the backward displacement of the nucleus of the lens, which is met with in these cases of posterior lenticonus, I shall have more to say later on.

The points which I have endeavored to bring out in the foregoing observations on the development of the lens capsule may be summarized as follows.

A. The lens capsule is the product of the epithelial cells lining it.

B. The time during which the posterior capsule of the lens has to complete its development is exceedingly short as the cells forming the posterior layer of the lens vesicle soon lengthen out into lens fibers and become separated from the capsule.

C. Congenital gaps in the posterior capsule are met with which are bridged across by fibrous tissue formation in the anterior part of the vitreous.

D. This fibrous tissue formation in the vitreous, which sometimes contains blood vessels from the central hyaloid artery may extend through the gap in the posterior capsule. An admixture of mesoblastic and epiblastic tissue within the lens capsule resulting.

E. This fibrous tissue formation at the back of, or within the lens capsule, accounts for those cases of exceedingly tough, shrunken, congenital cataracts which show little tendency to absorb after discission.

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[7] Sur l'histologie et l'étiologie du lenticône postérieur, Genève, 1906.

[8] Reported in Tr. Ophth. Soc. U. K., xxiv, 40.

[9] Pathologie und Therapie des Linsensystems, Handbuch der *gesamten Augenheilkunde*, vi, 201.

F. The protrusion of lens substance through a congenital gap in the posterior capsule, or the bulging of a congenitally thin posterior capsule, offers the best explanation of cases of congenital posterior lenticonus.

2. Passing now to defects occurring during the second of the three stages into which I split up the development of the lens: that in which the nuclear fibers are formed from the cells lining the posterior part of the lens vesicle.

Before the lens vesicle has become completely closed anteriorly the cells which come to form its posterior layer show signs of elongation. After the vesicle is complete the elongation progresses, continues until its whole cavity is filled by these cells transformed into lens fibers. These lens fibers later become surrounded by others laid on at the sides and form the nucleus of the lens.

If the cells forming the posterior layer of the lens vesicle for some reason failed to lengthen out into lens fibers, then no nucleus of the lens would be formed and the laterally developed lens fibers would have nothing to encircle.

I wish to point out that there is a form of congenital cataract in which the pathologic appearances are best explained by considering such an arrest of development in the nucleus to have taken place.

The clinical appearances of these cataracts are, I think, such as allow of them being differentiated from other forms of congenital cataract, and the recognition of their nature is of some practical utility in their treatment by operative measures.

The condition is one which has been spoken of as disc-shaped cataract and four cases have been published in which anatomic examinations have been made. The first by Becker[10] in 1883, one by Vossius[11] in 1893, one by myself[3] in 1898, and the other by Hess[12] in 1905.

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Evidently in these lenses there is an entire absence of the nucleus. Its failure in development does not seem, however, to have checked the activity of the cells lining the anterior and lateral parts of the capsule. The laminated mass in the center is, as I have said, precisely similar in appearance to the laminated masses met with at the anterior pole of the lens in anterior polar cataract. These, as I have shown in the early part of this paper, result from the proliferation of the cells lining the anterior capsule, as the outcome probably of a decrease of the intracapsular pressure in their vicinity. In these lenses, in which the nucleus fails to develop, there would likewise be an abnormally low intracapsular pressure in the neighborhood of the anterior pole of the lens, and so the formation of a large anterior polar cataract is what might be expected.

The activity of the cells lining the sides of the capsule not being interfered with, a formation of the laterally developed lens fibers has taken place. These having no nucleus around which to group themselves have formed accumulations at the sides of the anterior polar mass, with irregularities and vacuolations of varying distribution.

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The appearances which seem to be characteristic of this condition are: The presence of a dense, circular, central white opacity, which, while extending to the anterior capsule, is at a distinctly deeper level than that of the surface of the iris at the pupillary margin; some irregular grayer opacity in the immediate vicinity of the central white patch, in which the latter appears to be set. With an undilated pupil this central opacity may fill the whole of its area and appear to be a much shrunken opaque lens. If, however, a sufficient dilatation of the pupil can be obtained, a peripheral clear area is discovered. If an iridectomy is performed, the edge of the lens will become visible, but it will be seen not to present its normal rotundity, appearing too thin from before backward.

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In this class of congenital cataracts, most satisfactory results are to be produced by needling operations, especially if the nature of the condition which is being dealt with is recognized. One or two discissions usually suffice to allow of good vision.

In a child of 18 months with this form of cataract whom I operated on in January, 1906, I succeeded in each eye in tearing away the central dense white plaque which appeared to have calcareous matter in it. In each eye it has fallen into the lower part of the anterior chamber and remained there since. After its separation a good central opening through which a clear view of the fundus could be obtained was left.

3. My third stage in the development of the lens is concerned with the formation of the laterally developed lens fibers which surround the nucleus.

In the last class of cases dealt with, some dystrophic influence, acting on the lens vesicle exceedingly early in fetal life, resulted in the failure in formation of the lens fibers which develop from the cells of the posterior layer of the vesicle, but had not prevented the next stage in the formation of the lens, viz., the development of lens fibers laterally from the cells at the sides of the capsule.

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It is easy to imagine the exact reverse of this taking place, i. e., a normal, or comparatively normal, development of the lens fibers from cells forming the posterior layer of the vesicle, and the occurrence of some dystrophic influence later, interfering with the development of the laterally formed lens fibers.

Such an occurrence, I would suggest, offers an adequate explanation for another variety of congenital cataract which is met with, also presenting distinctive clinical characteristics. It is that form of congenital cataract in which a small nucleus, comparatively well formed, is met with in a capsule distended with opaque milky fluid, which latter has resulted from the proliferative activity of the cells at the sides of the capsule instead of lens fibers.

Clinically this form of congenital cataract presents the appearances of a Morgagnian cataract of late life. It has a characteristic milky white, homogeneous color, and sometimes shows chalk white specks on the surface.

I have operated on several congenital cataracts of this description; when the capsule is pricked with a needle there is an escape of the milky white fluid, often containing some flocculent particles, into the anterior chamber. In two cases in which I left the opaque fluid in the anterior chamber, I found the needling operation followed in the course of twenty-four hours by increase of tension. I now always adopt the precaution of evacuating it after making an incision with a broad needle.

The lens fibers developed laterally are formed by the lengthening out, forward and backward, of cells derived from proliferation of those composing the anterior layer of the lens vesicle. They gradually come to encircle the nuclear fibers developed from the cells of the posterior layer of the lens vesicle, and so cut it off from contact with the lens capsule. The separation of the original nuclear lens fibers from the capsule gradually increases with the growth of the lens.

Some laterally formed lens fibers lengthen out most backward and others most forward, but in the normally developed lens the nucleus is situated equidistant from the anterior and posterior capsule. Displacement backward of the nucleus of the lens is met with as a congenital malformation, there being a partial or complete failure in the backward growth of the laterally developed lens fibers; complete failure is sometimes due to adherence of the nucleus to the posterior capsule.

Patry, in his monograph of lenticonus posterior, in which he analyzes the histologic appearances in sixteen recorded cases, says:

> The nucleus is often (8 cases) situated very near the posterior pole, sometimes in immediate contact with the posterior capsule. This position is most often in association with a rupture of the posterior capsule.

As I have already pointed out, where he speaks of rupture of the posterior capsule in connection with this condition, I should say failure of development.

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Vossius[14] adopts the same explanation for a case of his in which there was in one eye a typical anteroposterior fusiform opacity, and in the other an anterior polar opacity and a lamellar cataract with a filamentary opacity passing between the two.

There is a variety of congenital axial cataract termed by Gunn[15] "coralliform" for which it seems to me difficult to accept the explanation suggested by Knies for his cases. In this coralliform cataract, tube-like opacities are seen to radiate forward and outward from the center of the lens toward the capsule and end in an ampulliform manner. In the absence of any histologic proof of the nature of such opacities, I would suggest that they are probably situated in the lines of suture between the fibers.

The lines of suture between the ends of the lens fibers vary in their arrangement in different animals, and in the human lens the arrangements which are met with in different animals are met with at different levels in its substance.

In the most primitive form of lens, such as the globular lenses of some fishes, all the lens fibers extend from a central point anteriorly to a central point at the posterior pole, and the suture passing anteroposteriorly is a single straight line.

The simplest divergence from this arrangement is for the ends of the lens fibers, instead of meeting at a point to meet along a line; the line at the anterior pole being at right angles to that at the posterior. This permits of some shortening of the lens fibers, those which have to extend farthest anteriorly not having to extend so far posteriorly, and *vice versa*.

A further modification effecting the same purpose is for the line of junction of the fibers to have a triradiate arrangement, the three arms of the triradiate figure at the anterior pole being situated in the reverse direction to those at the posterior.

A more elaborate arrangement still is the formation of a star-shaped figure with primary and secondary radiations along which the ends of the fibers come into contact.

The human lens in fetal life is at first globular; the fibers which are developed from the posterior layer of the secondary vesicle, and which form the extreme nucleus in the adult lens, have their extremities all meeting anteriorly and posteriorly.

As new lens fibers are laid on at the sides the lens alters in shape; the lateral diameter increases more than the anteroposterior. A different mode of meeting of the lens fibers at the surface is then met with. At birth the simple triradiate figure at the anterior and posterior pole is seen.

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In sections of the human fetal lens or of the lens at birth, the lines of suture running anteroposteriorly between the laterally developed lens fibers can easily be seen. Where the hardening of the lens has been imperfectly carried out and the lens fibers have shrunk, some expansion of the lines of suture frequently takes place. In sections of the adult lens the lines of suture are not to be detected.

It is well known that in both congenital cataracts and in cataracts occurring in late life disturbance may take

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[15] Tr. Ophth. Soc. U. K., xv, 119.

F. The protrusion of lens substance through a congenital gap in the posterior capsule, or the bulging of a congenitally thin posterior capsule, offers the best explanation of cases of congenital posterior lenticonus.

2. Passing now to defects occurring during the second of the three stages into which I split up the development of the lens: that in which the nuclear fibers are formed from the cells lining the posterior part of the lens vesicle.

Before the lens vesicle has become completely closed anteriorly the cells which come to form its posterior layer show signs of elongation. After the vesicle is complete the elongation progresses, continues until its whole cavity is filled by these cells transformed into lens fibers. These lens fibers later become surrounded by others laid on at the sides and form the nucleus of the lens.

If the cells forming the posterior layer of the lens vesicle for some reason failed to lengthen out into lens fibers, then no nucleus of the lens would be formed and the laterally developed lens fibers would have nothing to encircle.

I wish to point out that there is a form of congenital cataract in which the pathologic appearances are best explained by considering such an arrest of development in the nucleus to have taken place.

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place at the surface of the lens in the lines of junction between the lens fibers, resulting in a superficial triradiate or star-shaped opacity. What I now suggest is that disturbance in the lines of sutures, not only at the surface, but also in their course as they radiate forward and outward from the nucleus, accounts for lines of opacity in congenital cataracts which are seen to radiate in that direction.

The defects which I have described as arising during this third stage of development in the lens may be summarized as follows:

1. The formation of congenital Morgagnian cataract from failure in development of the lens fibers laid on laterally and their replacement by opaque albuminous fluid.
2. Congenital displacement backward of the nucleus of the lens, associated with a defective growth backward of laterally developed lens fibers.
3. Congenital fusiform axial cataract (of Knies and Vossius), due to adhesion of the nucleus of the lens to the anterior and posterior capsule and defective growth forward and backward of the laterally developed lens fibers.
4. Axial opacities radiating forward and outward from the nucleus and located in the lines of sutures between the lens fibers laid on laterally, which run in that direction.

In conclusion, I would, as the outcome of my clinical and anatomic studies, make the following suggestions concerning the treatment of congenital cataract.

First.—To wait until a child is 10 months old before operating. At an earlier age the cornea is so small and the anterior chamber so shallow that the necessary instrumentation can not be so satisfactorily carried out as in the more fully developed eye. Moreover, the amount of aqueous humor is so small that it does not suffice for the solution of the liberated lens substance.

Second.—In some cases in which the pupil is small and does not dilate well with atropin it is best to commence with an iridectomy.

Third.—In nearly all cases it is well to begin with a needling. For valuable information can be obtained by its means as to the thickness of the capsule and consistency of the lens should it fail to liberate much lens matter to the action of the aqueous.

Fourth.—If the cataract is a dense, white, anterior polar one, set in a ring of clear, or partially clear, lens substance, and apparently flattened from before backward (the so-called disc-shaped cataract), then an attempt should be made to separate the central white opacity with a needle and let it fall into the anterior chamber. Two needles are sometimes required to effect this.

Fifth.—If on pricking the capsule, milky-white fluid escapes into the anterior chamber (congenital Morgagnian cataract) it is well at once to evacuate this fluid, for fear of increased tension ensuing.

Sixth.—In some cases of congenital cataract the whole lens and capsule can be removed in a most satisfactory way by grasping it with forceps. Very often, however, such a procedure is followed by escape of vitreous. It is difficult to differentiate which cataracts can be safely dealt with in this manner. They generally seem to be complete cataracts with a tough capsule and lens matter of a gelatinous consistency.

Seventh.—If after a needling and some absorption of liberated lens matter, a dense, tough, white, fibrous-looking membrane remains, there is probably some atypical development of the anterior part of the vitreous. An attempt had then best be made forcibly to displace the membrane downward and backward out of the axis of vision.

Original Articles

OCCURRENCE OF SPONTANEOUS ARTERIAL DEGENERATION IN THE RABBIT.*

RICHARD M. PEARCE, M.D.
From the Bender Laboratory.
ALBANY, N. Y.

As one of the earlier investigators of lesions of the vascular system occurring in the rabbit after intravenous injections of adrenalin[1] I have been interested in the observation of Drs. Miles and Johnstone[2] concerning the frequent occurrence of spontaneous arterial lesions. These investigators suggest that the vascular lesions, ascribed by many observers to the injection of adrenalin, are in reality of spontaneous origin. In support of this view they present the results of the examination of a large number of normal rabbits in which lesions similar to those produced by adrenalin occurred with equal or greater frequency.

The inevitable conclusion is either that the spontaneous lesions are common and that the individuals working with adrenalin have been careless about their controls, or that rabbits of certain localities, or those raised or kept under certain conditions, are peculiarly prone to spontaneous lesions. The first of these conclusions has been met by Dr. Joseph L. Miller,[3] who points out that in Jores exhaustive review of the many attempts, often on a large scale, to produce arteriosclerosis experimentally there is no mention of successful results. These experiments included the use of a variety of substances and in by far the larger number the rabbit was used. Furthermore, during the past few years many attempts have been made to produce arterial lesions by subcutaneous and intraperitoneal injections of adrenalin as controls of the intravenous administration; a procedure necessitating a very careful comparative study of the rabbit's vascular system.

The only spontaneous lesions, according to Miller, which were described previous to the work of Miles and Johnstone were the slight changes described by Fisher in poorly nourished animals, a single instance reported by Ophüls and possibly the atheroma, in two rabbits, ascribed by Croftan to injections of hypoxanthin. Miller, moreover, points out that in Loeb's series of 100 normal rabbits and Meronescu's of 300, no lesions were found and also that the subcutaneous adrenalin injection experiments of Miles and Johnstone are of no value. The weight of evidence, therefore, does not support the suggestion that spontaneous lesions are general but have been overlooked by the neglect of control observations.

In this respect, however, I must admit my negligence in not reporting control observations in my earlier communication. Control observations were made on a small number of animals with entirely negative results, but on account of the small number were not published. During the past winter, in order to determine the incidence of spontaneous lesions in the rabbits supplied to the Bender Laboratory, I have examined 62 animals. Except for six pairs obtained from dealers in Pittsfield and Brookline, Mass., these animals were procured in the neighborhood of Albany, usually in small lots of one, two or three pairs, and in large part were animals which had been caught in the fall and domesticated but a short time. Of these, 51 may be considered presumably normal animals in that they had not been used previously for experiment of any kind, or were used only on the day of killing for blood pressure experiments or to obtain blood or fresh organs. They also represent animals which, in that they were used shortly after purchase, did not pass through a long laboratory life. They may be grouped roughly according to size into three groups of about equal number as large, small, and medium size. Vascular lesions were found in but three; these consisted, in each, of a few minute patches at the beginning of the aorta. All were large animals and presumably full grown.

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* Work done under a grant from the Rockefeller Institute for Medical Research.

[1] Jour. Exper. Med., 1906, viii, 74, 400; Am. Jour. Med Sciences, 1906, cxxxii, 737.

[2] THE JOURNAL A. M. A., Oct. 5, 1907.

[3] THE JOURNAL A. M. A., 1907, xlix, 1789.

Of the remaining eleven animals, one suffered from an abscess of the hip; three had received repeated injections of dog's serum; one, nephrotoxic serum; one, human blood; one, typhoid bacillus and three, chrome salts. These were all in the laboratory for several weeks or months. In this group lesions of the aorta occurred in four; in the animals receiving, respectively, injections of typhoid bacillus, dog serum, nephrotoxic serum and human blood. In two of these the lesions were diffuse involving irregularly the entire aorta and comparable to those produced by adrenalin. In the other pair a few small areas were present at the beginning of the aorta only.

This control study shows that spontaneous lesions were found in three of 51 presumably normal rabbits or in practically 6 per cent., or, if the animals used for various experimental purposes are included, in 7 of 62 animals or 11 per cent. This last view, however, is hardly fair, for as the lesions were present in four animals of the second group, or in 36 per cent., it cannot be denied that the experimental procedure may possibly have had some share in their production. Certainly the influence of typhoid toxin and alien sera can not be entirely set aside in view of our knowledge of the very general degenerative changes which these substances cause.

In this connection it may be mentioned that Israel[4] in his study of the relation of heart hypertrophy to experimental nephritis has described and pictured a very diffuse lesion of the aorta in a rabbit receiving injections of alcohol directly into the kidney. This observation has been quite generally ignored in the recent literature of experimental arteriosclerosis; but Israel's illustration plainly pictures a lesion of the aorta not to be distinguished from that caused by adrenalin.

It would appear, therefore, that while spontaneous arterial degeneration may occur in the rabbit, it is not as constant a condition in all localities as the investigations of Miles and Johnstone indicate. Moreover, the figures here presented offer a satisfactory control of my earlier report on the general subject of experimental arteriosclerosis due to adrenalin and the later report in which I conclude that single doses of adrenalin may cause arterial lesions, a conclusion which might appear doubtful if viewed only in the light of the experiments of Miles and Johnstone.

In my opinion the occurrence of spontaneous lesions in the rabbit does not diminish the importance of the lesions due to adrenalin, but on the contrary, increases their importance, as an example of a lesion occasionally occurring naturally, but which may readily be produced experimentally. The rabbit thus becomes a peculiarly valuable animal for the study of vascular lesions, for the interest of the adrenalin lesion lies not so much in its arteriosclerosis-like nature as in the opportunity offered for the study of degenerative and reparative lesions of arteries.

The possibility of a variety of factors operating to cause vascular injury is suggested by the four positive findings in the second group of 11 rabbits. The contrast with the first group is very striking and would indicate that a study of the arterial system of a large number of rabbits, kept under a variety of conditions, and subjected to various experimental procedures, would yield results of great value concerning chronic vascular lesions.

Finally it may be stated that the demonstration of these spontaneous lesions in no way vitiates the importance of the experimental lesions but does demand a very careful control study of the rabbits in each locality in which experiments are made.

THREE CASES OF CEREBELLAR TUMOR.

OPERATION IN TWO CASES; RECOVERY IN ONE.*

WHARTON SINKLER, M.D.

PHILADELPHIA.

The subject of tumors of the cerebellum has excited much interest during the past few years and the question as to the advisability of operation is still a mooted one. It seems desirable, therefore, to add to the literature all the cases possible, so as to throw more light on the subject, and this is my excuse for reporting at this time only three cases of cerebellar disease. These all, however, exhibit some interesting and instructive features.

Opinion varies widely as to the beneficial results of operation. For example, Sachs says that out of twenty-three of his patients, not one was cured. Operation was done in seven of these cases, but without recovery. Frazier, in 1904, collected reports of one hundred and sixteen cases of operation on the cerebellum, with recovery in 15 per cent. Starr, in 1903, gave as a result of operation in fifty-eight cases of tumors of the cerebellum, recovery in sixteen; that is, he states that the tumor was removed and the patient recovered.

It seems, therefore, as if there should be some more definite understanding as to the meaning of recovery. If an author means by recovery that the growth has been removed and the patient survives a few weeks, it is a very different thing from a case in which there has been no return of symptoms for two or three years; and one cannot help feeling that writers mean different things when they give such different results.

In the cases reported by me, one patient recovered from the operation, and when seen seven months later, he was apparently in perfect health. In this case, the growth was a cyst, the contents were evacuated and the wound closed. The patient when seen had no headache, his gait was normal and his mental operations were good. His vision, however, was practically lost. In the right eye he was totally blind, and in the left there was only sight enough to enable him to go about and read very large type. The vision in this case failed rapidly after the operation, although the swelling of both discs subsided very rapidly.

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[4] Virchows Archiv., 1881, lxxxvi, 299.

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

In the second case the patient had shown no signs of brain disease until nine weeks before she came under observation. Her symptoms progressed so rapidly and vision had begun to fail to such an extent that, although there were no definite localizing symptoms to indicate a point for trephining, it was thought advisable to do a decompressive operation. Dr. Mills saw the patient with me and on account of the nature of the symptoms thought it possible that the lesion might be located in the vermis; at any rate, it seemed as likely that the tumor was situated in one hemisphere as the other. There was paralysis of the sixth nerve on the right side and this fact made us select a point over the right hemisphere for making the first trephining. No growth was found at operation, but at the autopsy which was made thirteen days later, a tuberculous tumor was found in the anterior part of the right hemisphere of the cerebellum, infringing on the medulla and making a marked depression in its right side. In the left hemisphere were two smaller tumors. The fact of there being a growth in each hemisphere would account for the bilateral symptoms presented by the patient during life. In walking, she would sometimes pitch to one side and sometimes to the other. In this case, although the swelling of the discs subsided in a remarkable manner after the operation, the vision continued to fail.

These two cases teach us that in order to save vision an operation must be done at an early date.

A point of interest in the third case is that sudden death occurred while the patient was in fairly good condition. Sudden death in brain tumor is not unusual. I have seen two or three instances of this myself. A lesson to be learned from this case is that, had an early operation been done, the patient would probably have been cured of his trouble because the tumor was found postmortem to be one which could have been readily removed. This is another example of the importance of early operations in tumors of the cerebellum. If one comes to the conclusion that an operation must be performed, it is worse than useless to delay to try the effect of drugs, or for any other reason. In the words of Macbeth: "If it were done when 'tis done, then 'twere well it were done quickly."

CASE 1.—*Patient.*—G. H., was seen in consultation with Dr. Louis Jurist on Sept. 15, 1907. The boy was 10 years old. The parents were both healthy and two brothers and two sisters were healthy. The father admitted that he had a specific urethritis, but denied any history of syphilis in himself or family.

History.—Fourteen months previously, in July, 1906, the boy was hit in the eye with a wooden peg. He became sick at his stomach, vomited and had severe headache for some time afterward. There was no further trouble after this. One year ago he began to complain of pain in the occipital region. This constantly grew worse, and in June, 1907, he would often vomit during the severe headaches. These violent attacks usually occurred in the early morning. Five weeks ago he had severe headache and vomiting, which lasted for three days. The eyes were examined by Dr. Schneideman, who found that both optic discs were very much swollen. The patient was admitted to the Orthopedic Hospital and Infirmary for Nervous Diseases, Sept. 28, 1907.

Examination.—The patient was found to be a well-nourished boy, but of pale color. In walking there was distinct incoordination and a tendency to pitch toward the left side. There was no loss of power in either arm or leg. When the mouth was opened it was drawn slightly to the right. The tongue was protruded straight. The pupils were large and equal. The vision was very poor. The knee-jerks were normal and equal. The plantar reflex was normal; there was no Babinski phenomenon or ankle clonus. The heart and lungs were normal. The tongue was coated, but the patient's appetite was good and the digestion seemed fair. The conspicuous symptom was pain in the head. This was quite violent and was referred to the occiput. There was more or less pain all the time, but there were attacks of *severe headache with vomiting.* There was no tenderness over any part of the scalp.

After admission to the hospital the pain in the head lessened in severity, and it was not until October 5 that the boy had a severe headache. *After this time the headaches increased* in frequency, and the boy's walking became worse; he staggered *considerably, deviating* to the left. The station was poor and he was unable to stand with the eyes closed.

Diagnosis.—Dr. Charles K. Mills *kindly saw the patient in* consultation and agreed with me that the case was one of tu*mor of the cerebellum, and that it was probably* in the left hemisphere. Dr. W. J. Taylor was asked to see the patient with a view to operation, and after consultation it was decided to open the skull and attempt to remove the growth.

First Operation.—The following notes have been furnished by Dr. W. J. Taylor: Oct. 12, 1907. Ether was given as an anesthetic and a curved incision made over the cerebellum on the left side. The skin and soft tissues down to the bone were deflected, and there was now tremendous hemorrhage, probably from the veins leading from the bone to the scalp. The patient's prostration was out of all proportion to the amount of blood lost. The hemorrhage from several of these sinuses, or veins could be controlled only by plugging the opening in the bone with bits of sterile wood, and Horsley's way was used freely all over the surface of the bone. With the chisel a small opening was made in the skull and then enlarged to about an inch and a half in diameter with the rongeur forceps. The patient's condition was now so alarming that it was deemed best to pack the wound and wait for him to recover from the shock. The dura, therefore, was *not opened, although* it was very tense and bulging. The patient's general condition was so bad that intravenous saline injections were given and a variety of stimulants employed hypodermically.

In spite of the great loss of blood and the shock, he recovered very satisfactorily from the effects of the operation. At Dr. Sinkler's suggestion, it was decided to wait before doing anything further to see if this decompression would relieve the patient's symptoms. He was very much relieved of his headache, but by November 2 the headache had returned, there was cerebral vomiting, and his condition was steadily growing worse.

Second Operation.—He was therefore again given ether and the flap of the skin over the former wound was carefully dissected away from the dura. The dura bulged very much more than at the first operation, and there was little or no hemorrhage from the scalp. The dura was incised by a curved incision, and immediately the cerebellum tissues pushed out through the slit that was made. This was rapidly enlarged, and the brain bulged at least one inch above the surrounding dura. While dissecting off the dura—for it was adherent at one or two points where it had to be stripped off with the finger —there was noticed a slight difference in appearance of the surface of one of the convolutions near the mastoid side of the wound. This change was so peculiar in its character that I had just said that here undoubtedly was a tumor, when a cyst gave way and a spurt of serous fluid was ejected with such force that it went three feet away from the wound. The column of the fluid was nearly the size of a pencil. Of course, it was impossible to collect any of this fluid for examination, but its consistence and appearance was that of an ordinary pleuritic effusion. Immediately the cerebellum collapsed, and instead of there being a protrusion there was a depression in the wound. The opening in the cyst was then slightly enlarged, and it could be seen that there was a thin-walled cyst, the wall of which could not be dissected out. There was no evidence of malignancy or induration about it. A small drain of iodoform gauze was carried down to and into the opening of the cyst and the dura was closed over it.

Later History—The patient made an absolutely uninterrupted recovery, indeed, by the next morning he said that he felt perfectly well All of his pain was gone and he did not vomit once, even from the ether In three or four weeks he was walking about and feeling as well as usual Seven months later he was in good health, but had been admitted to an asylum for the blind

Eye Examination and History—Oct 1, 1907, the vision of the right eye was 6/0 —, of the left eye 6/6— The pupils measured 4.5 cm and reacted normally to light forced convergence and accommodation Ophthalmoscopic examination revealed pronounced choked discs, the height of the swelling being between 6 and 7 D At the lower edge of the swollen disc of the left eye there was a large retinal hemorrhage No macular changes were noted in either eye The visual fields were concentrically contracted for form and colors These examinations were made by Dr Holloway, and seven days later repeated by Dr de Schweinitz, who found an increase in the swelling of the right optic disc the height of which was now 8 D, while the left optic disc remained about the same, namely, 7 D no change in the other ocular conditions previously noted, and no palsy of any exterior ocular muscle Convergence, however, was poor the left internus being the weaker

The next ocular examination was made Oct 18, 1907, or six days after the first operation, at which there had been excessive hemorrhage At this examination Dr Holloway found the height of the swollen disc of the right eye to be 7 D, and therefore slightly less swollen than it was on October 8 An added ophthalmoscopic appearance was the formation of a complete stellate figure in the macula, composed of milky white striæ, at the outer limits of which were several small hemorrhages, and adjacent to them a thin, diffuse hemorrhage There was also one fresh hemorrhage on the temporal side of the swollen disc The height of the swollen disc of the left eye was 7 D, and in the macula a number of fine, yellowish white dots had formed, which were associated with several punctate hemorrhages Seven days later there were practically no ophthalmoscopic changes except that in the left eye the previously fine punctate spots had begun to form by coalescence a stellate figure

November 2, three days after the second operation, Dr de Schweinitz found a notable diminution in the swelling of each optic disc, that on the right side being reduced to between 3 and 4 D in height, therefore a lessening of practically 4 D, while on the left side the disc measured between 5 and 6 D, or from 1 to 2 D less than it had been prior to the second operation There was marked depreciation of central vision of each eye Again, five days later there was still further reduction of the visual acuity, so that now the right eye had only doubtful light perception, while in the left eye the vision was reduced to 4/20 and one letter of 4/15 There was still further reduction in the height of the swollen discs which now on the right side measured about 3 D and on the left side between 4 and 5 D

At the next examination, on November 15 the right eye was found to be entirely blind and the vision of the left eye 5/15 — There was no light reflex of the right pupil but the left pupil responded promptly to light The conditions of the discs were about the same as at the last examination, and continued so, with gradual loss of vascularity and reduction in the height of the swelling, until December 6 when the vision of the right eye was as before, entirely obliterated, and of the left eye about 6/30

The evidence of marked postpapillitic atrophy most pronounced on the right side were clear, and the swelling of the discs had almost disappeared

On Jan 10, 1908 the right eye was entirely blind and the left eye had a vision of 6/60 There was pronounced postpapillitic atrophy on both sides

This condition of affairs had continued until the present time and at the last examination on March 27 1908 both discs now being flat and showing well marked atrophy the visual field of the left eye was reduced in size and color perception practically lacking The vision of 6 60 was still retained

Exactly how soon after the first operation the depreciation of central visual acuity began can not be stated owing to the fact that the boy's condition was such that no accurate tests could be made In spite of the rapid reduction in the swelling which took place after the second operation and the evacuation of the cerebellar cyst, atrophy of the optic nerve on each side rapidly supervened This unfortunate result in an otherwise brilliant case from the surgical standpoint has been noted in other instances in which there has been excessive hemorrhage, and it is not improbable that to such excessive hemorrhage this atrophy should be attributed, owing to a rapid deterioration of the ganglion cells In any event, if the vision of 6/60 is retained, which now seems likely the operation saved the boy from total blindness, which otherwise must certainly have taken place

CASE 2—*Patient*—M K, aged 16, a girl had been employed in an overall factory for seven months and was admitted to the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases, April 21 1908 Her family history was negative, as far as could be ascertained

History—She seemed to have enjoyed good health, there was no history of injury The present condition developed about nine weeks previous to admission, with violent, persistent pain in the head, projectile vomiting after taking food, unsteadiness of gait and double vision She had grown steadily worse

Examination—She was found to be a thin, poorly nourished girl, quite tall and slender There was an internal strabismus of the right eye, the result of paralysis of the right externus, and she kept the right eye closed much of the time in order to secure single vision The resident physician thought that there was ptosis of the right lid, but this was uncertain At any rate, in the course of three or four days whatever ptosis there had been had entirely disappeared The thyroid gland was somewhat enlarged, especially the right lobe The heart's action was rapid, but there was no murmur There was distinct impairment of resonance at the right apex Examination of the abdomen was negative The patient's walk was very unsteady Sometimes she pitched to the right side and sometimes to the left, and often would fall if not supported In standing her station was bad, with the eyes open or shut It was a little worse with the eyes open, but did not grow decidedly worse after long standing There was a distinct tendency to sway backward while standing, and the patient often had to be held to keep from falling There was no change in sensation in any part of the body, and no paralysis in any muscle or group of muscles There was a lack of facial expression, but the movements of the face were equal on both sides The knee jerks were completely absent, the plantar reflex was present The patient had no cough and had a fairly good appetite She was ordered rest in bed, soft diet, potassium iodid 10 gr three times a day, the dose to be increased one grain three times a day inunction of mercurial ointment daily

Eye Examination—The examination of the eyes was made by Dr Holloway on April 24 He made the following report O D, 6/6 O S, 6/6 pupils equal—larger than average They react to light and to indirect accommodation and convergence Media are clear The patient has a bilateral optic neuritis more extensive on the right side The veins are much fuller on the right There is no exudate in the macular region and there are no pronounced hemorrhages The height of the right disc is 4 — 4½ D left disc 3½ — 4 D, fundus, 1 — D The patient has a paresis of the right external rectus On rotation of the eyes to the left, the left eye attains full limits, but excursion is not well maintained On rotation to the right, the right eye goes to within ¼ inch of the left canthus There is a slight convergent squint in the left eye On lateral rotation there are nystagmoid movements at the outer limit slight when rotated toward the right more pronounced when rotated toward the left no nystagmoid movements on vertical rotation' Four days later, April 28, Dr de Schweinitz made an examination of the eyes and reported 'Right eye vision 6/9 — 6/6, left eye vision, 6/6 — 6 6 Right eye optic neuritis surface + 4 diopters Veins very full and uneven Full vascularity of discs Left eye beginning neuritis, surface + 2 diopters Veins not large Center of disc not filled in The patient seemed to improve somewhat for several days The vomiting ceased and also the pain in the head. This was probably due to the fact that she was kept extremely quiet. On May 1, Dr. Holloway made another examination of the eyes and found the fields distinctly contracted. Vision, right eye, 6/9 and four letters on 6/6. Vision, left eye, 6/9, and one letter on 6/6. Height of disc about the same, but process in the left eye seemed more pronounced.

The patient's symptoms all seemed to be growing worse. There was return of vomiting and some pain in the head and vision was failing distinctly. I asked Dr. Charles K. Mills to see the patient with me and he agreed fully in the diagnosis of the cerebellar tumor. There were no positive localizing symptoms, but we decided that in order to save the vision, if possible, a decompressive operation should be performed.

Operation.—In view of the fact that the sixth nerve palsy was on the right side, we thought best to trephine first over the right hemisphere. Dr. G. G. Davis performed the operation. An opening 1½ inches in diameter was made in the skull and the dura was opened. The cerebellum showed more than normal tension and it was softer than usual. An exploratory puncture was made with a probe in two directions, but no fluid was obtained and no sense of either growth or cyst was felt. There was considerable amount of hemorrhage, but not excessive. The patient was under the anesthetic for two hours and a quarter.

Postoperative History.—The patient made a good recovery from the anesthetic and seemed in good condition the next day. There was no change in vision, although it could not be carefully tested. On May 8, three days after the operation, Dr. Holloway made an examination of the eyes and found vision O. D. 6/15 and two letters on 6/12, O. S. 6/9 and two letters on 6/6, no free hemorrhages and no reduction in the swelling of the discs. On May 12, seven days after the operation, Dr. de Schweinitz made an examination of the eyes and reported: "Right eye, apex of disc not more than + 2 D., edges still veiled but visible. Left eye, all edges clear and surface of disc not more than 1 D. Outer half shows beginning atrophy and change. Vision 6/60 in each eye." The patient maintained that she could see no more. Dr. de Schweinitz said: "There has been an astonishing subsidence of the choked disc. In point of fact, it has nearly disappeared on left side and only about a diopter and a half remains on the right side. I am sorry to say, however, that direct vision has materially depreciated, so that now there is only about 6/60 or 1/10 of normal vision as compared with 2/3 before the operation. I hope that this is more apparent than real, and that the patient's very depressed condition may have accounted for some of her inability to read letters." The patient grew rapidly worse from this time. On May 15 her temperature varied from 100 to 102, respiration was 30 to 40. Her mind was cloudy, there was twitching of hands and arms, but more continuous twitching on the left side. There was some hypostatic congestion of the lungs, which had been steadily increasing. May 17 patient died, twelve days after the operation.

Autopsy.—This was made by Dr. H. B. Wilmer, the resident physician, who kindly gave me the notes. There was absence of rigor mortis, considerable wasting of the muscles, slight distention of the abdomen. The skullcap was removed in the usual manner; the dura seemed slightly thickened, with marked congestion of the vessels. The brain substance seemed of normal consistency. On inspection of the base of the brain there was seen a dense grayish membrane covering the base and extending up the sides of the cerebellum. There also seemed an increase in the amount of cerebrospinal fluid. This was not measured, as a great deal was lost in the process of removing the brain from the cranial cavity. All the nerve tracts at the base of the brain were intact. The vessels of the cortex were markedly congested and stood out prominently. Apart from this the gross appearance of the cortex was normal. The pia at base of the brain and over the anterior surface of the pons, extending to the optic chiasm was somewhat milky in appearance. About the optic chiasm there was a moderate amount of yellowish gray fibrous exudate. The sixth nerves did not appear abnormal at exit. The cerebellum showed on exterior of the right side the site of operation. There was a cavity with ragged edges large enough to insert the end of the little finger, with some blood clots around the edges. On cross section on the left side in about the central portion of the hemisphere were seen two rounded gray masses, well defined and quite different from the surrounding brain tissue. The anterior tumor was separated from the second by normal brain tissue and was 15 mm. in diameter and 5 mm. in depth. The posterior tumor was larger, being 8 mm. in diameter and 8 mm. in depth. In the cerebellar substance of the right hemisphere another tumor was found, 18 mm. in diameter and 12 mm. in depth, bordering on the median line and extending forward so as to cause marked pressure on the medulla, where there was observed a small depression just above the decussation of the pyramids. The growth did not extend outside the cerebellar substance. On microscopic examination the growths were found to be tuberculous. At the right apex there was found tuberculous consolidation and a considerable amount of cheesy matter could be expressed from the lung tissue.

CASE 3.—*Patient.*—P. H., aged 26, married, was seen in consultation with Dr. William Turner VanPelt at the Episcopal Hospital March 29, 1905. He had previously been under the care of Dr. Burton Chance, who has reported the case at length from the ophthalmologic point of view.[1]

History.—When about 15 years of age the patient had an attack of insolation, from which he recovered without ill effects. He was a printer of cotton stuffs. He denied venereal disease and stated that he had always been temperate. About Easter, 1904, he was suddenly seized with a violent attack of headache, which lasted four days. In July he sailed for England, his native country. During the voyage he had violent vomiting, which was supposed to be due to seasickness. After landing, however, he had severe headaches and violent attacks of vomiting which were projectile in character. Then for a considerable period he had headaches on alternate days, the attacks usually occurring after awakening in the morning. After September 1 the attacks were infrequent. He returned home in October and during the voyage he was very sick and had violent spells of vomiting. After landing he suffered intensely with pains in the head in the occipital and frontal regions. About the middle of November the right side of the face became crooked and continued so for about a week. About this time it was noticed that the external rectus of the left eye was paralyzed, and a day or two later diplopia set in. This was followed by dimness of vision and photophobia. Except on the days of the headaches, when the arms and legs felt numb, he was able to take the usual amount of exercise. The headaches gradually subsided and he felt quite well. On Dec. 22, 1904, the patient was first seen by Dr. Chance. At that time there was nothing remarkable in gait or station. The tendon reflexes were apparently undisturbed. Mental condition was clear. The patient's chief complaints were referred to the eyes. The acuity of vision of the right eye was reduced to 6/15 and the left eye to 6/22.5. The accommodation power was abolished. The optic axes were markedly convergent, the left external rectus failed to effect parallelism. There was no nystagmus. The optic discs were swollen to + 5 D. The retina was everywhere edematous. The arteries were constricted and reduced to threads, while the veins were great broad tortuous currents. On the swollen nerve head were several flame shaped hemorrhage extravasations. The patient was admitted on December 27 to the Germantown Hospital. He was confined to bed and a course of alteratives, diaphoretics and salines was instituted. At the end of ten days the diplopia disappeared and the edema of the retina and venous engorgement became remarkably reduced. At no time was there vomiting, headache, disturbance of locomotion, or change in station. The acuity of vision remained unchanged and the optic papillæ remained as prominent as at the earlier examinations. The patient was discharged from the hospital on January 23 and remained in fairly good condition until February 26, when he suffered from intense right sided headaches. Two days later there was convulsive seizures involving the arms, with stiffness in the back of the neck, occipital pains with vomiting. The patient was admitted to the Episcopal Hospital on March 2, 1905.

Examination.—He was found to be weak and debilitated, but without any actual loss of power in the extremities. The blood count was perfectly normal. There was no albumin or sugar in the urine. The vision of the right eye wa 20/70; left eye, 20/200. The posterior rotation of the left eye was somewhat impaired by the paresis of the external rectus. All movements of right eye showed no impairment of the extraocular muscles. In neither eye were there nystagmoid movements. The pupils reacted normally to light, convergence and consensually. The fields of vision were contracted. The ophthalmologic examination showed great swelling of the retina, the projection of the optic discs to 6 D. splotches of degeneration and small linear hemorrhages and enlargement of the optic disc. There was spasticity of the muscles of the neck with retraction of the head.

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[1] Tr. Coll. Phys., Philadelphia, 1905.

Course of Disease.—Mercurial inunctions were ordered daily and light diet only was allowed. At once marked improvement in the health took place and continued for ten days. There were no attacks of vomiting and he was greatly relieved of the headache. After two weeks the diet was enlarged and potassium iodid in increasing doses was prescribed. After this time there was a return of the headaches, with much violence The pain was usually located in the occiput, rotating to the left frontal region. The head was retracted. Vomiting was frequent. When seen by me the patient complained of violent pain in the occiput; there was stiffness of the muscles of the neck, with a tendency to retraction of the head. The patient could walk unassisted, but the gait was very unsteady and he staggered with a distinct tendency to fall to the left side. The patella reflexes were abolished. A diagnosis of tumor of the cerebellum, probably on the left side, was made, and an operation was urgently advised. However, it was deemed wise to continue medical treatment for a few days longer, and the operation was therefore postponed. On April 7, while in fairly good condition, the patient was seized with violent delirium, from which he fell into a comatose state and died suddenly four hours later.

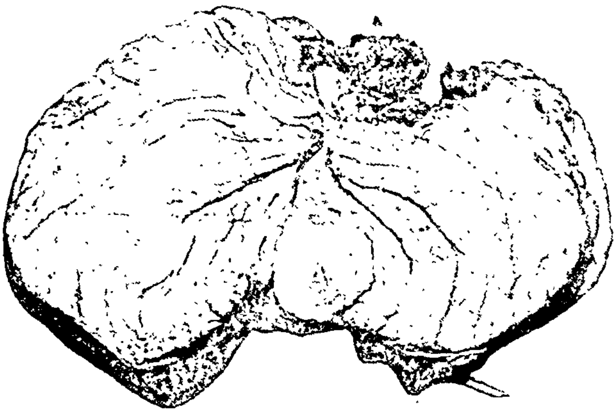

Fig. 1. Case 2.—Showing two tuberculous tumors in left hemisphere of cerebellum and one in right. A indicates tumors.

Autopsy.—A tumor was found situated in the outer portion of the left lobe of the cerebellum, to which it was loosely attached. It was not at all infiltrating, but had made a depression in the left cerebellar lobe 2.5 cm. in depth. The tumor was very firm, almost globular, with a somewhat irregular surface, and did not appear to have been adherent to the dura. It was 0.4 cm. in width and 5.5 cm. in thickness from above downward. When cut it appeared friable and resembled a fibrosarcoma. It had caused some pressure on the fourth ventricle and thereby moderate internal hydrocephalus of the cerebrum, although the aqueduct of Sylvius was not much dilated and the fourth ventricle not at all. The third and lateral ventricles of the brain were moderately distended, especially the posterior horn of the left lateral ventricle, the floor of which was forced upward by the pressure of the tumor on the under surface of the left occipital lobe. None of the cranial nerves were implicated in the tumor. The microscopic examination showed that the tumor was a fibrosarcoma. This report was made by Dr. W. G. Spiller, who remarked that he had "never seen a tumor of the cerebellum which offered more favorable conditions for operation than did this tumor, situated as it was on the lateral portion of the left cerebellar lobe and not infiltrating the cerebellum in the least."

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DISCUSSION.

Dr. Charles K. Mills, Philadelphia: I saw one of these cases with Dr. Sinkler. It is quite an interesting point in symptomatology that this patient who had on each side of his brain in each lateral lobe of the cerebellum, a small tumor, did not present the laterality so often observed in lateral lobe growths, nor did he present the peculiar compensatory attitude of the head or body which is observed in these unilateral cerebellar growths. This record is a small but important addition to our knowledge of the symptomatology of bilateral lesions of the cerebellum. The growth on one side seemed to compensate for that on the other in the production of the symptomatology, at least so far as any trending to one side or any one-sided attitude was concerned.

Dr. John J. Thomas, Boston: I saw a number of years ago a case in which operation had been refused, and in which on autopsy we found a tumor on each side of the brain at the cerebellar-pontile angle; and there the unilateral symptoms pointing to one side seemed to be counteracted by the presence of another tumor on the opposite side. My own experience lately has confirmed what Dr. Mills and Dr. Sinkler have said, that if we are going to have any effect on the vision from operation, it must be done very early.

Dr. Archibald Church, Chicago: Out of seven of my cases in which operations have been done, four patients have made what might be called perfect recovery. In the first case in which Dr. McArthur operated for me, and which was seen by Dr. Jones in St. Luke's Hospital just after the operation, we found a hemorrhagic cyst, and there was a clear history of cerebellar hemorrhage. This patient recovered and worked as a laborer practically for years, but has disappeared. I did not favor operation in the second case. The patient was afterward operated on in St. Louis by Dr. Mudd under the direction of Dr. Fry. The tumor was removed and the man lived over two years. During much of this time he served as proprietor and editor of a newspaper. The third patient came to me from Wisconsin, a clergyman, who presented symptoms of cerebellar tumor. Dr. Brower and Dr. Bassoe confirmed my diagnosis. The patient was operated on by Dr. Bevan, who found a large tumor of the cerebellum, but did not remove it. A couple of weeks later, on my urging him to do so, he reopened the wound and removed the tumor. The man has been conducting the services of a country parish ever since. The fourth case was that of a boy who received an injury on the head by swinging against the corner of a house in a rope swing, striking the back of his head. Some weeks afterward he complained of headache. When he came to me he had double choked disc and other manifestations of cerebellar tumor. An operation was done by Dr. Van Hook, an apparently gliomatous cyst being uncovered and scraped out. Unfortunately, the scrapings were lost, so that the confirmation of the pathologic condition was not made. The boy is still alive, entirely blind, but with no recurrence.

The other three patients died directly. But four recoveries out of seven give one reason to hope that the prognosis is not so bad in properly selected cases when operation is done early, as the larger statistics might indicate.

Dr. Julius Grinker, Chicago: I had an experience with a cerebellar tumor which I think is unique. A patient had been complaining of nervous symptoms for a year, had been sent from one physician to another, had been examined for ophthalmoscopic findings, and no abnormalities had been found. Her last physician was an ophthalmologist, who found the eyegrounds normal. He referred the patient to me. She was considered hysterical. When she first came to me I found no symptoms of tumor. She had been visiting me for a period of four weeks, when one day she entered my office presenting the typical cerebellar gait, complaining of vertigo and nausea; she barely opened the door, when she staggered and almost fell to the floor. She said: "I am so dizzy; I just got dizzy crossing the street-car tracks." I examined her fundus and found a typical choked disc. My diagnosis was cerebellar tumor. Two weeks later she was operated on, when a large irremovable cerebellar tumor was found. The patient did not recover. Here was a patient who probably suffered from cerebellar tumor for over a year without discoverable symptoms.

Another interesting case that I might mention here is one of a tumor at the cerebello-pontile angle, diagnosed as a case of neurasthenia by a very good neurologist, until his brother, also a doctor, brought the patient to me and told me that he suspected tumor. At that time some new symptoms had developed, deafness, tinnitus aurium, difficulty in vision, patient almost blind, and I diagnosed it as a case of tumor in the left cerebello-pontile angle. Several surgeons tried to find it, but did not succeed. The patient was taken to Baltimore and Dr. Harvey Cushing found a small fibroma in the left cerebello pontile angle. In the meantime, the boy had become blind. This case emphasizes the importance of diagnosing and localizing tumor when blindness is not complete; when the latter has occurred operation can not preserve vision. The boy made a perfect recovery, but his vision will never return. How different the result might have been if operation had been performed before blindness had occurred!

THE MEATO-MASTOID OPERATION IN CHRONIC MASTOIDITIS.

THE TECHNIC, RATIONALE AND INDICATIONS.*

WILLIAM LINCOLN BALLENGER, M.D.
CHICAGO.

To Heath belongs the credit of attracting wide attention to a mode of operative technic which promises to supplant the radical operation in a considerable number of cases. The operations devised by Wolfe, Stacke, Korner and Heath are not identical, though they are in general similar.

I have called the operation as performed by me, the meato-mastoid operation, as it consists (a) in the removal of the posterior wall of the bony meatus as deep as the annulus tympanicus, and (b) the complete exenteration of the mastoid cells. The remnants of the membrana tympani and the ossicles are not disturbed (Fig. 1).

The technic is indicated in column two of the Comparative Table of Technic.

SPECIAL POINTS OF TECHNIC WHICH LARGELY INFLUENCE THE SUCCESS OF THE MEATO-MASTOID OPERATION.

The points to which attention is called, are: (1) The complete exenteration of the pneumatic cells in the temporal bone. (2) Shall the walls of the bony wound be left rough, or shall they be made smooth? (3) The plastic meatal skin flaps. (4) The drainage dressing.

(1) *The Exenteration of the Pneumatic Cells of the Temporal Bone.*—I have more than once heard the statement that no operator can positively say that he has removed all the pneumatic spaces of the temporal bone. While this is perhaps literally true, practically it is not. In exceptional cases the cells are distributed over such a large area as almost to include the lateral half of the skull. A specimen in the possession of Dr. Ernest de Wolfe Wales presents the remarkable phenomenon of the apparent communication of the mastoid cells with the sphenoidal cells via the base of the skull, below and posterior to the petrous pyramid of the temporal bone. In such a case it would perhaps be impossible to exenterate all the pneumatic cells. The surgeon may know, however, when he has removed all the cells in the mastoid process, the zygomatic root and the squamous plate. It is somewhat more difficult to locate the cells when they are anterior to the meatus. In such cases they are usually also present in the zygomatic root, and if the zygomatic cells are carefully exposed in a forward direction those in the region anterior and superior to the bony meatus will be exposed to view and exenteration.

Having suggested the possible anatomic distribution of the cells, the question of the necessity for their complete removal remains to be discussed. The chief object of their removal is to establish free drainage and ventilation. If these purposes can be accomplished without a complete exenteration, the tissues may gradually assume their normal condition and a cure result. Unfortunately the ostia between the cells are often small and may prevent such a happy result.

In the first place, the channels or ostia of communication between the cells are often so small that the least swelling of the mucous membrane completely blocks them. In the second place the remote cells are often the seat of infective granulation tissue which still further obstructs the drainage and ventilation. If the cells are not fully exposed and exenterated they will continue to discharge purulent secretions into the mastoid wound for an indefinite period. I recall a few cases in which such a discharge persisted from beneath the upper plastic meatal skin flap and have no doubt that it came from the zygomatic cells.

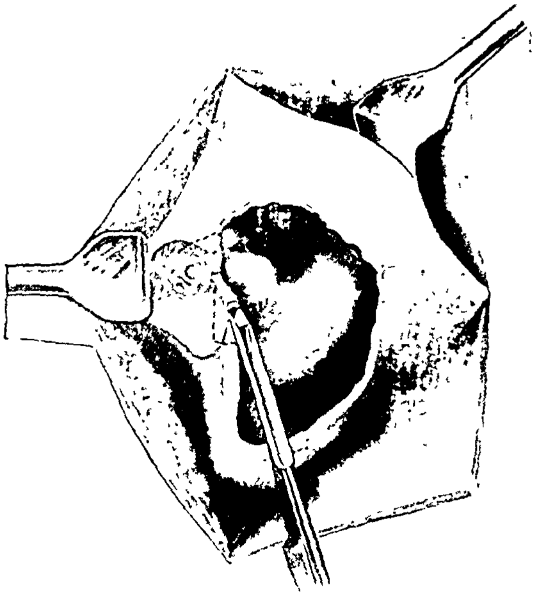

Fig. 1.—The complete exenteration of the mastoid cells. In the meato-mastoid operation the posterior wall of the meatus should be removed down to the annulus tympanicus as shown by the dotted lines.

(2) *Shall the Walls of the Bony Wound Be Left Rough or Shall They Be Made Smooth?*—Another reason for the complete exenteration of the mastoid cells is that in many of the cases of chronic mastoiditis the bone is dense and sclerosed, and the nutrient blood vessels are small. The vitality is low and the process of regeneration by granulation tissue is imperfectly performed. The low vitality predisposes the new granulation tissue to infection, and exuberant granulations. It becomes necessary, therefore, to adopt measures that will provide better nutrition to the granulation tissue. The most feasible way is to reflect the plastic meatal skin

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908. The article is here abbreviated by the omission of the comparative table of technic and part of the pictures. The complete article appears in the Transactions of the Section.

flaps into the mastoid wound. They are richly supplied with blood vessels which rapidly extend into the new granulation tissue covering the mastoid walls. The granulation tissue is thus abundantly supplied with nutrition, and the process of repair is completed with but little or no exuberant granulations. The mastoid wound should be rendered comparatively smooth as the plastic skin flaps are reflected on its surface. If the flaps are reflected over uncapped or half removed cells, infective foci remain beneath it, and, the drainage and ventilation being blocked, the suppurative process continues beneath the flaps. This not only prevents the union of the flaps with the mastoid wall, but it also measurably interferes with the reparative process in the uncovered portion of the mastoid walls. The portion of the wound not covered with the plastic meatal flaps should also be made comparatively smooth for two reasons, first the blood supply is inadequate (in sclerosed bone) to support healthy or vigorous granulations, hence any bony recesses left may become foci of infection and thus interfere with the process of repair.

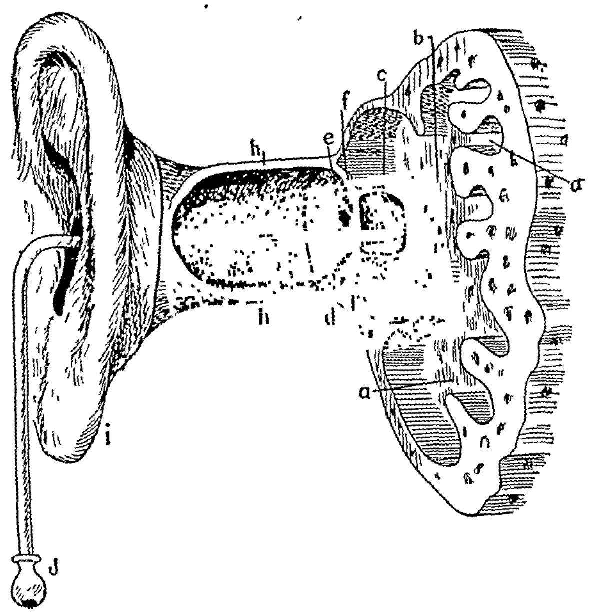

Fig 4.—Schema showing the method of introducing the canula into the aditus ad antrum during the after treatment of the meato-mastoid operation. a, a, mastoid cells; b, mastoid antrum; c, aditus ad antrum; d, membrana tympani; e, perforation in the membrana tympani; f, annulus tympanicus; h, h, opening in the posterior wall of the meatus; i, auricle; j, j, silver canula.

In all cases in which the bone is sclerosed or eburnized the walls of the bony wound should be made smooth with the curette and burr (Fig. 2). In those cases in which the bone is well supplied with blood this procedure is not essential.

(3) *The Plastic Meatal Skin Flaps.*—The proper use of plastic meatal skin flaps exerts a decided beneficial effect on the speed and certainty of the cure. In other words I believe that in a given case, all other points of technic being equal, the recovery will take place more quickly and certainly if properly formed and adjusted skin flaps are reflected into the mastoid wound *via* the window in the posterior wall of the meatus, than it will if plastic flaps are not used, or if used, are improperly adjusted. I also believe that improperly adjusted flaps are worse than no flaps. One operator told me that he often made the Trautmann tongue flap and then cut it off, as he had considerable trouble with it when the dressings were removed. That is, the deeper end became detached, and if it was not removed, caused a stricture in the region of the aditus ad antrum (in the radical operation). The same objection applies to any other plastic flap. The main question is, how may the plastic flap be adjusted and anchored permanently in the proper position? I have used the Ballance flaps in a large number of cases during the past five years with increasing satisfaction and success, and inasmuch as a number of my colleagues have expressed a disappointment in their plastic work, I am encouraged to describe my method of procedure.

While I use the Ballance incision and flaps I do not anchor them as he does. My technic is as follows: (a) Having lifted the cutaneous meatus from the external auditory canal, the fibrous, muscular and fatty tissue is removed from its posterior wall with strong curved scissors (Fig. 5). The posterior wall of the concha is likewise freed from the same kind of tissue. This is done to render the flaps as thin as possible so that when they are reflected through the window in the posterior wall of the meatus they will occupy but little space. The removal of the redundant tissue also insures speedy union with the bony walls over which the flaps are reflected. The fibrous tissue on the posterior wall of the meatus and concha has low regenerative powers and is easily infected. Should it be left on the flaps and become infected prolonged suppuration would ensue. When it is removed, and only skin is left, rapid union with the bony tissue takes place without the danger of suppuration between flaps and bony walls. I therefore urge that this step of the technic be observed, as I believe it is essential to the best success.

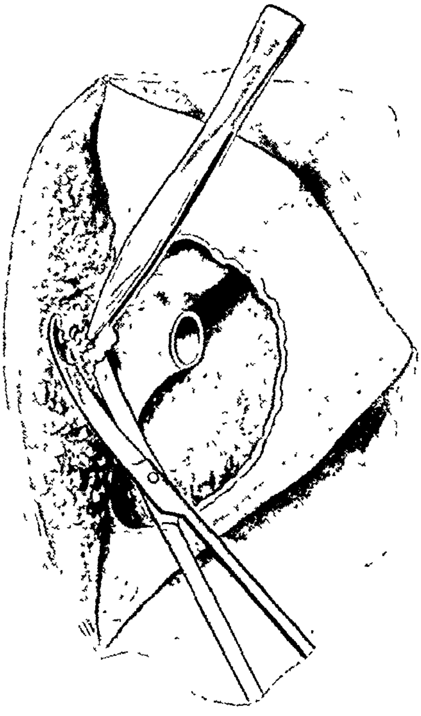

Fig. 5.—Removal of the redundant tissue from the posterior wall of the meatus and concha preparatory to making the Ballance incision.

(b) Introduce the divulsion forceps into the cutaneous meatus in such a position that the prongs will open at the posterior inferior portion of the tube (Fig. 6), as the incision should be made in this segment of it.

The prongs should then be spread apart to render the tissues tense preparatory to making the incision.

(c) The meatal or straight portion of the incision should be made with a small scalpel beginning at the inner end of the meatus and extended to the concha (Fig. 7).

(d) The ear should be placed in its normal position in the mastoid wound and the conchal or curved portion of the incision completed with the scalpel (Fig. 7).

(e) The cartilage on the conchal portion of the flap should be dissected from it, and any remaining redundant tissue removed from the meatal flaps to render them as thin and pliable as possible. Tension should be made on them in the direction toward which they are to be retracted in the wound to ascertain whether they are entirely free, as it is necessary to carry them into the wound as far as possible. If they are still bound by tissue attachments these should be overcome by incision or the removal of more redundant tissue.

(f) Introduce the tension or anchor sutures into the plastic flaps as shown in Figure 8. Usually two are required in the upper flap, one in the conchal and one in the meatal portion. One suture is enough for the shorter lower flap.

(g) Replace the auricle in its natural position and exert tension on the conchal suture to determine where it will be necessary to anchor it to the skin posterior to the postauricular incision, in order to retract that portion of the flap against the upper or cranial wall of the mastoid bony wound. Then pass the needle beneath the skin for a distance of three-quarters of an inch and bring it out through the skin at this point (Fig. 9). Next make tension on the suture in the meatal portion of the upper plastic flap and determine the point of anchorage required to bring it into the upper part of the wound. Finally make tension on the sutures in the lower plastic flap and determine the point of anchorage required to bring it over the facial ridge. Each suture should pass through the skin three-quarters of an inch posterior to the primary, mastoid incision as shown in Figure 9. The other end of each suture should pass out through the postauricular incision. Catch the two ends of each tension suture with artery forceps or tie them loosely until the postauricular incision is closed.

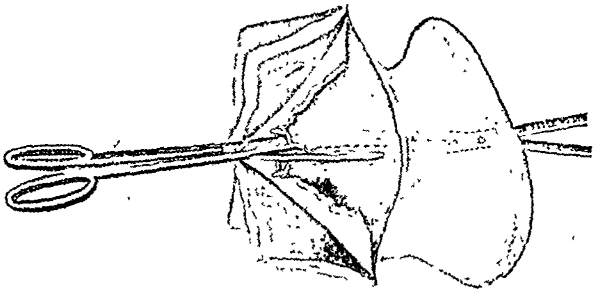

Fig. 6.—The meatus put on a tension with division forceps while the incision is being made.

(h) Close the postauricular incision as usual, carefully placing each loose end of the tension suture in lines parallel with the end passing through the skin.

(i) Tie the tension sutures over small roller bandages (Fig. 10), carefully noting through the enlarged meatal opening in the concha the position of the plastic flaps, and when they have assumed the proper position in the wound cease making tension. Tie them in the order mentioned in section (g).

The tension sutures serve two purposes: (1) They hold the plastic flaps in position against the facial ridge and the upper or cranial wall of the mastoid bony wound until they become firmly adherent. The rich blood supply from the flaps insures rapid extension of healthy granulations over the mastoid wound. (2) They lift the auricle upward and partially restore it to its normal position. Without the sutures in the upper plastic flap the auricle droops about one-half inch below its normal position.

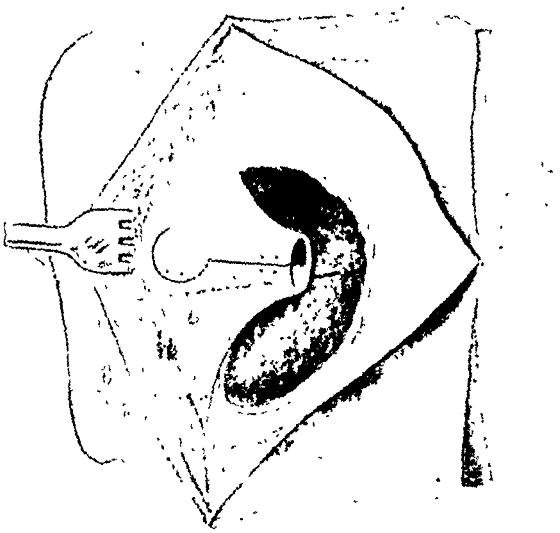

Fig. 7.—The Ballance incision in the posterior inferior wall of the skin meatus and the concha.

I wish to reiterate what I have already said, namely, that the proper use and adjustment of the plastic meatal flaps is one of the most important points of technic in the surgery of chronic sclerosing mastoiditis, as the sclerosed bone is inadequately supplied with nutrient blood vessels to support rapidly growing healthy granulation tissue. The plastic skin flaps supply the necessary nutrition, granulation and epidermization often being complete in from two to six weeks. If this method of adjusting the plastic flaps is used it will rarely be necessary to use Thiersch grafts except, perhaps, in the tuberculous cases.

(4) *The Drainage Dressing.*—A distinction should be made between the drainage dressing and the external or absorbent dressing. The drainage dressing is for one purpose only, namely, to carry the secretions from the mastoid wound as fast as they form. The external dressing is for two purposes, namely, to absorb the secretions carried to it by the drainage dressing, and to protect the wound from extraneous pathogenic bacteria.

If the wound is either tightly or loosely packed with gauze the secretions saturate it and are constantly in contact with the reparative granulation tissue. This not only subjects it to chemical and mechanical irritation, but also to infection, as evidenced by exuberant granulations. When the gauze is removed the granulation tissue is also more or less injured.

If, on the contrary, the drainage dressing consists of a small wick of gauze within a rubber tube, the granulation tissue is but little disturbed by its removal. Furthermore, the granulating bony walls of the wound are not bathed in the secretions as the drainage dressing is only in contact with the most dependent portion of the wound. The secretions gravitate to the bottom of the wound where they are taken up by the wick of drainage gauze and carried outward to the external absorbent dressing. I have used this form of dressing for nearly two years and have noted decidedly better results. During the same period I have also improved my technic in the use of the plastic meatal skin flaps, and ascribe some of the improvement to that fact. It stands to reason, however, that the drainage dressing should only be large enough, or have the capacity, to carry the secretions away as fast as they are formed. If, however, the drainage dressing completely fills the wound it will become saturated before it will carry the secretions to the external or absorbent dressing. While it ultimately drains the secretions it primarily causes their retention in the wound.

As the first and fundamental law pertaining to the relief of infection of suppurating cavities is free drainage it is obvious that failure (in any degree) to secure it will hinder the process of repair somewhat in proportion to the degree of failure. This being true the drainage gauze or tube should be in contact with the most dependent portion of the cavity while the capacity of the wick should only be great enough to carry away all the secretions. If it is smaller than this it will not remove the secretions, whereas, if it is larger it retains the secretions within its meshes, at least to the point of saturation, after which it discharges them upon the external or absorbent dressing.

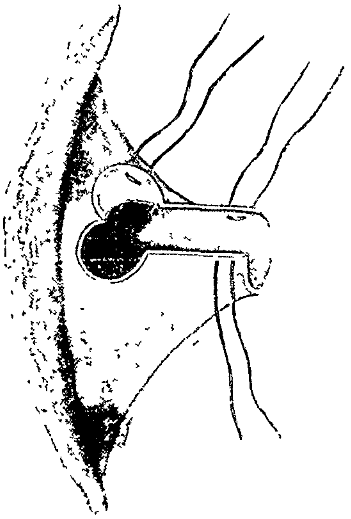

Fig. 8.—The anchor sutures in the meatal flaps.

A small drainage wick removes the secretions, and maintains the granulation tissue at its maximum vitality and speedy healing follows.

A large drainage dressing which fills the wound becomes saturated with the morbid material, which constantly bathes the granulation tissue, macerates and infects it, and lowers its vitality. Exuberant granulations and tardy healing results.

As the middle ear is not exposed in the meato-mastoid operation provision should be made during the first week or ten days following the operation to facilitate its drainage. The Eustachian tube is still more or less blocked on account of its swollen mucous membrane, and if it can be given a few days in which to recuperate the swelling will subside, and its lumen increase in size, so that the secretions may be drained through it. Heath uses a silver canula so bent as to allow it to be introduced through the meatus and the window in its posterior wall, into the antral end of the aditus ad antrum (Figs. 3 and 4). A rubber hand bulb is attached to the proximal end of the canula and blasts of air are forced through the middle ear. By this means the secretions and small polypi are expelled from the middle ear through the perforation in the drumhead into the external auditory meatus. This procedure is repeated, daily until the aditus ad antrum becomes closed by granulation tissue.

At the end of this time the secretions will have diminished in quantity, and the lumen of the Eustachian tube will have increased in size, and drainage is thereafter adequately provided for. The conditions in the middle ear are more nearly normal, the infection and inflammation gradually subside, and the processes of repair go on to a favorable resolution. At the end of a few weeks or months the perforation in the drumhead becomes closed in some of the cases, while in others it remains open.

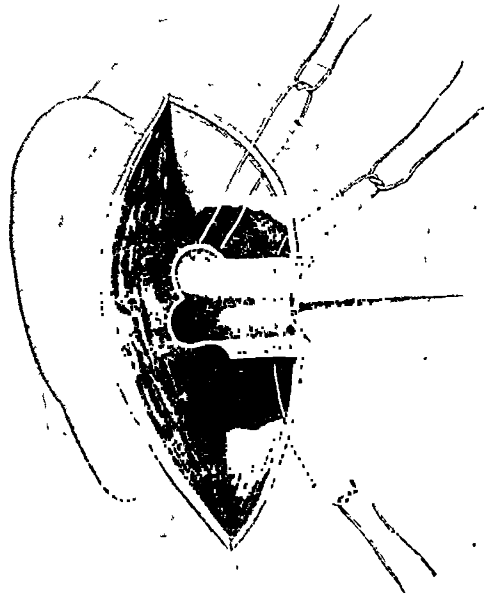

Fig. 9.—The anchor sutures in place.

THE RATIONALE.

The rationale of the meato-mastoid operation is based on the following principles:

(a) The promotion of healthy granulation tissue and epidermization of the walls of the mastoid wound. This is accomplished by making the surface of the bony wound smooth, and the proper adaption of the plastic meatal skin flaps to it.

(b) The establishment of ample drainage. This is accomplished by diverting the secretions from the mastoid antrum and cells through the window in the posterior wall of the meatus into the external auditory meatus and by passing blasts of air via the aditus ad antrum through the middle ear.

If the above conditions are established in properly selected cases of chronic mastoiditis the results will be as good as if the radical operation were performed, and in one respect they will be much better, namely, the hearing will be much improved, often approaching normal.

THE INDICATIONS FOR THE MEATO-MASTOID OPERATION.

It is too early to accurately forecast the exact indications for this operation, as only an extended experience will afford the data for such a forecast. There are, however, certain broad principles on which the indications may be tentatively based. In addition we may revert to our small experience as a guide in formulating the indications.

Based on the therapeutic indications chronic mastoiditis may be divided into three classes, namely, (1) Those amenable to non-operative treatment, or to surgical treatment through the perforate drumhead, to the vault of the pharynx, and to the nose. (2) Those amenable to the meato-mastoid operation. (3) Those only amenable to the radical mastoid operation.

(1) *The Cases Amenable to Non-surgical Treatment or to Minor Surgical Procedures.*—These are usually characterized by a central (non-marginal) perforation (Fig. 11, a, b, c) and the absence of necrosis of the walls of the tympanum and mastoid antrum and cells.

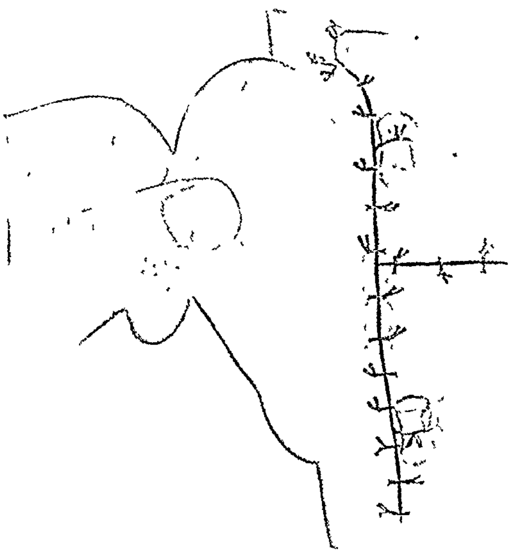

Fig. 10.—The skin and anchor sutures.

Many of these cases are amenable to simple treatment addressed to the tympanic cavity and Eustachian tube. Indeed, most of them are directly due to infection and inflammation of the Eustachian tube and can only be overcome by curing the pathologic process in the tube. The question naturally arises, as to the cause of the continued infection of the tube. Is it due to some peculiarity of the tube or to some pathologic process in some of the contiguous structures? In my opinion it is usually due to a pathologic process in one or more of the contiguous structures, as the lymphoid tissue in the epipharynx, and the posterior ethmoidal and sphenoidal sinuses. The presence of adenoids is almost always attended by more or less infection and inflammation (epipharyngitis) which extends by continuity of tissue and by direct infection to the Eustachian tube. Adenoids or their remnants are often present in adults, as any one who has made many examinations of this region can testify.

It is obvious, therefore, that the therapeutic indication in such cases is first to remove the infected lymphoid tissue from the epipharynx, and then to irrigate the Eustachian tube and tympanic cavity before deciding on the necessity for a mastoid operation. In other cases, the presence of a chronic infection and inflammation of the posterior ethmoidal and the sphenoidal sinuses will perpetuate an infection and inflammation of the Eustachian tube, middle ear, and mastoid cells. In either of the above conditions, the first therapeutic indication is to remedy the epipharyngeal or the nasal disease before attempting to cure the aural disease by a mastoid operation. Having overcome the infection of the epipharynx and the accessory nasal sinuses the Eustachian tube may be irrigated through a Weber-Liel catheter, and drainage promoted through the external auditory meatus by dry gauze wicks as suggested by Spencer of St. Louis in the early eighties, or by such other local treatment as may be deemed best. Should these cases resist these and other simple therapeutic measures they may be successfully cured by the meato-mastoid operation and the hearing restored to near the normal.

(2) As a general proposition it may be stated that the meato-mastoid operation is indicated in all cases in which simple measures have failed, and in which the operation will establish adequate and permanent drainage, and remove the morbid material.

Conversely, it may be stated that the meato-mastoid operation is contraindicated in those cases in which it will fail to establish adequate and permanent drainage, and remove the morbid material. In the later class of cases the radical mastoid operation is indicated.

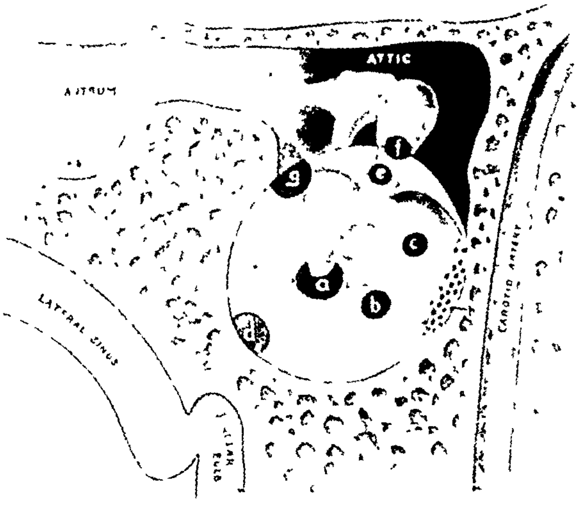

Fig. 11.—Schema showing the significance of variously located perforations of the membrana tympani: a, b and c, Central perforations, usually denoting infection of the Eustachian tube; d, e, f, g, marginal perforations, usually denoting necrosis of the contiguous bony tissue.

The indications according to the above propositions are to be found in the answer to the following question:

Under what conditions will the meato-mastoid operation establish adequate and permanent drainage and remove the morbid material?

Before answering this query it is necessary to define what is meant by (a) adequate and permanent drainage and by (b) the removal of the morbid material.

(a) Adequate drainage consists in the removal of the secretions as rapidly as they are formed. Inadequate drainage is present when for any reason the secretions are retained in sufficient quantity, and for a long enough period of time, to cause undue pressure, and to undergo decomposition. According to a well-established law in pathology, adequate (free) drainage raises the vital re sistance of the involved tissues and favors the disappearance of the infection and inflammation; that is, if the process of repair is established. Conversely, inadequate drainage lowers the resistance of the tissues and favors the perpetuation of the infection and inflammation and prevents the successful establishment of the process of repair.

(b) The morbid material may be a purulent or other abnormal secretion, or it may be cholesteatomatous material or necrotic bone.

In simple otitis media and mastoiditis (without necrosis or other complications) with a central perforation of the drumhead, adequate drainage and the removal of the morbid material may often be accomplished without surgical intervention. The morbid material in these cases is the purulent or mucopurulent secretion. The use of cotton-tipped applicators, the Eustachian air douche, and sterile gauze in the meatus in the interims between treatments is often the only treatment necessary. If the perforation is small it should be enlarged by incision to facilitate the drainage of the secretions (morbid material). In other cases in which the infection is perpetuated by an obstruction at the floor of the attic (the aditus ad antrum being open) the removal of the malleus and incus will effect a cure. Even when small granulations are present in the attic, faithful and intelligent treatment through the meatus and Eustachian tube sometimes effects a cure. In the type of cases referred to in this paragraph the infection and inflammation are often perpetuated by epipharyngitis, adenoids, and posterior ethmoidal and sphenoidal sinuitis. Appropriate therapeutic measures addressed to these conditions, together with simple treatment of the middle ear, will often effect a cure.

If cases of the above type resist the treatment suggested, they may be subjected to the meato-mastoid operation with almost certain success. By this operation the secretions from the mastoid antrum and cells are diverted through the window in the posterior wall of the meatus, into the meatus. The secretions from the middle ear escape through the Eustachian tube and the perforation in the drumhead. By this division of labor the secretions are adequately drained, the resistance of the tissues raised, and the process of repair permanently established. Even when superficial necrosis of the ossicles and tympanic walls are present complete healing may occur. Many cases are on record in which large sequestra of bone were removed and healing followed without a mastoid operation. It is possible, therefore, that by improving the drainage by the meato-mastoid operation an extensive necrotic process within the middle ear may heal out, though in such cases I would recommend a radical mastoid operation.

In those cases in which the necrotic process is limited to the mastoid antrum and cells, the meato-mastoid operation is indicated. Such cases have frequently occurred in my practice as well as in that of others. Even should there be some necrosis in the tympanum the removal of the antral and mastoid disease and the diversion of the secretions to the external meatus, greatly favor the subsidence of the infection, and accelerate the process of repair.

That the operation will as favorably influence more extensive diseased processes in the tympanic cavity I do not claim, indeed, I doubt it. Only time and the combined experience of a large number of operators can determine this fact.

(3) If grave complications, such as thrombosis of the lateral sinus perforation of the tegmen antri, and an epidural or brain abscess, having its atrium of infection through the tegmen antri, are present, it is probable that the meato-mastoid operation will effect a favorable termination, provided, of course, that the complications are treated in the usual manner. In such conditions the operator should be guided by the symptom-complex present in each case. If, for example, there is a marginal perforation over the short process of the malleus it is probable that there is necrosis of the tegmen tympani. With such an indication I would advise the radical operation. If, however, the perforation is at the margin of the posterior superior segment of the drumhead the meato-mastoid operation may be tentatively performed, as a perforation in this region is significant of necrosis in the mastoid antrum, rather than of the tympanic cavity. The meato-mastoid operation would, therefore, establish adequate drainage and remove the morbid material and would probably effect a cure, i. e., a regeneration of the remaining diseased tissues.

THE CONTRAINDICATIONS TO THE MEATO-MASTOID OPERATION.

(a) All simple cases, cases curable by non-surgical and minor surgical treatment through the external meatus.

(b) All cases curable by the proper surgical attention to the epipharynx and the posterior ethmoidal and sphenoidal sinuses.

(c) Cholesteatoma of the tympanic cavity. The removal of the cholesteatoma from the tympanic cavity would dislocate the ossicles, and if this is done the radical mastoid operation should be performed as the chief object, the meato-mastoid operation, is defeated by the dislocation of the ossicles, namely, the preservation and improvement of the hearing.

(d) Epidural abscess with its atrium of infection through the tegmen tympani. It is obvious that in order adequately to drain an epidural abscess in this region the tympanic cavity should be exposed to give access to the atrium of infection which should be enlarged.

(e) Brain abscess with the atrium of infection through the tegmen tympani is a contraindication to the meato-mastoid operation for obvious reasons.

(f) Infection, suppuration, and necrosis of the labyrinth is a contraindication to the meato-mastoid operation as the affected portions of the labyrinth should be exposed to inspection and if necessary to surgical treatment.

The conditions referred to in paragraphs c, d, e and f call for the radical operation, as only by this method of exposure is adequate drainage and the removal of the morbid material certainly established.

It is true that the radical operation will cure all the conditions in which simple conservative treatment, minor surgical procedures, and the meato-mastoid operation are alleged to be indicated. It is also true that they may be cured in many cases by less radical procedures, hence the less radical procedures should be tried when there is a probability of a cure by them. Furthermore, the less radical measures preserve and often greatly improve the hearing even to the point of almost normal hearing. The radical operation, on the contrary often results in great impairment of the hearing, and, therefore, should only be used when the other methods of treatment have failed, or, for obvious reasons must fail, because by them adequate drainage and the removal of the morbid material can not be effected.

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THE INDICATIONS FOR THE MEATO-MASTOID OPERATION.

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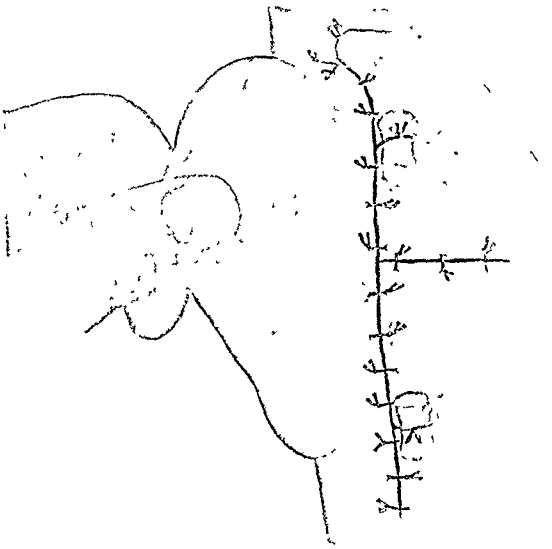

Fig. 10.—The skin and anchor sutures.

It is obvious, therefore, that the therapeutic indication in such cases is first to remove the infected lymphoid tissue from the epipharynx, and then to irrigate the Eustachian tube and tympanic cavity before deciding on the necessity for a mastoid operation. In other cases, the presence of a chronic infection and inflammation of the posterior ethmoidal and the sphenoidal sinuses will perpetuate an infection and inflammation of the Eustachian tube, middle ear, and mastoid cells. In either of the above conditions, the first therapeutic indication is to remedy the epipharyngeal or the nasal disease before attempting to cure the aural disease by a mastoid operation. Having overcome the infection of the epipharynx and the accessory nasal sinuses the Eustachian tube may be irrigated through a Weber-Liel catheter, and drainage promoted through the external auditory meatus by dry gauze wicks as suggested by Spencer of St. Louis in the early eighties, or by such other local treatment as may be deemed best. Should these cases resist these and other simple therapeutic measures they may be successfully cured by the meato-mastoid operation, and the hearing restored to near the normal.

(2) As a general proposition it may be stated that the meato-mastoid operation is indicated in all cases in which simpler measures have failed, and in which the operation will establish adequate and permanent drainage, and remove the morbid material.

Conversely it may be stated that the meato-mastoid operation is contraindicated in those cases in which it will fail to establish adequate and permanent drainage, and remove the morbid material. In the later class of cases the radical mastoid operation is indicated.

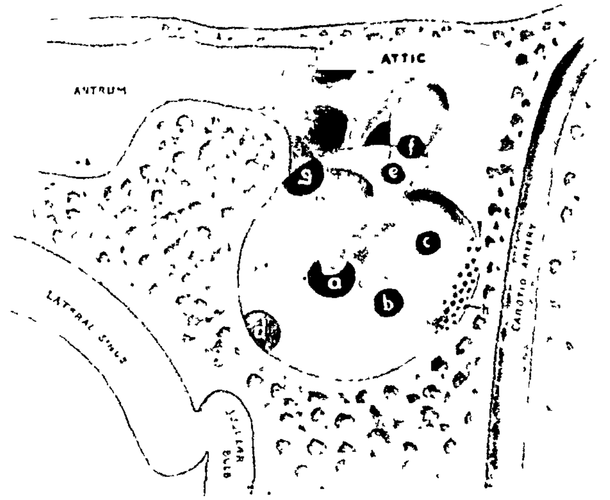

Fig. 11.—Schema showing the significance of variously located perforations of the membrana tympani: a, b and c, Central perforations, usually denoting infection of the Eustachian tube; d, e, f, g, marginal perforations, usually denoting necrosis of the contiguous bony tissue.

The indications according to the above propositions are to be found in the answer to the following question:

Under what conditions will the meato-mastoid operation establish adequate and permanent drainage and remove the morbid material?

Before answering this query it is necessary to define what is meant by (a) adequate and permanent drainage and by (b) the removal of the morbid material.

(a) Adequate drainage consists in the removal of the secretions as rapidly as they are formed. Inadequate drainage is present when for any reason the secretions are retained in sufficient quantity, and for a long enough period of time, to cause undue pressure, and to undergo decomposition. According to a well-established law in pathology, adequate (free) drainage raises the vital re sistance of the involved tissues and favors the disappearance of the infection and inflammation; that is, if the process of repair is established. Conversely, inadequate drainage lowers the resistance of the tissues and favors the perpetuation of the infection and inflammation and prevents the successful establishment of the process of repair.

(b) The morbid material may be a purulent or other abnormal secretion, or it may be cholesteatomatous material or necrotic bone.

In simple otitis media and mastoiditis (without necrosis or other complications) with a central perforation of the drumhead, adequate drainage and the removal of the morbid material may often be accomplished without surgical intervention. The morbid material in these cases is the purulent or mucopurulent secretion. The use of cotton-tipped applicators, the Eustachian air douche, and sterile gauze in the meatus in the interims between treatments is often the only treatment necessary. If the perforation is small it should be enlarged by incision to facilitate the drainage of the secretions (morbid material). In other cases in which the infection is perpetuated by an obstruction at the floor of the attic (the aditus ad antrum being open) the removal of the malleus and incus will effect a cure. Even when small granulations are present in the attic, faithful and intelligent treatment through the meatus and Eustachian tube sometimes effects a cure. In the type of cases referred to in this paragraph the infection and inflammation are often perpetuated by epipharyngitis, adenoids, and posterior ethmoidal and sphenoidal sinuitis. Appropriate therapeutic measures addressed to these conditions, together with simple treatment of the middle ear, will often effect a cure.

If cases of the above type resist the treatment suggested, they may be subjected to the meato-mastoid operation with almost certain success. By this operation the secretions from the mastoid antrum and cells are diverted through the window in the posterior wall of the meatus, into the meatus. The secretions from the middle ear escape through the Eustachian tube and the perforation in the drumhead. By this division of labor the secretions are adequately drained, the resistance of the tissues raised, and the process of repair permanently established. Even when superficial necrosis of the ossicles and tympanic walls are present complete healing may occur. Many cases are on record in which large sequestra of bone were removed and healing followed without a mastoid operation. It is possible, therefore, that by improving the drainage by the meato-mastoid operation an extensive necrotic process within the middle ear may heal out, though in such cases I would recommend a radical mastoid operation.

In those cases in which the necrotic process is limited to the mastoid antrum and cells, the meato-mastoid operation is indicated. Such cases have frequently occurred in my practice as well as in that of others. Even should there be some necrosis in the tympanum the removal of the antral and mastoid disease and the diversion of the secretions to the external meatus, greatly favor the subsidence of the infection, and accelerate the process of repair.

That the operation will as favorably influence more extensive diseased processes in the tympanic cavity I do not claim, indeed, I doubt it. Only time and the combined experience of a large number of operators can determine this fact.

(3) If grave complications, such as thrombosis of the lateral sinus perforation of the tegmen antri, and an epidural or brain abscess, having its atrium of infection through the tegmen antri, are present, it is probable that the meato-mastoid operation will effect a favorable termination, provided, of course, that the complications are treated in the usual manner. In such conditions the operator should be guided by the symptom-complex present in each case. If, for example, there is a marginal perforation over the short process of the malleus it is probable that there is necrosis of the tegmen tympani. With such an indication I would advise the radical operation. If, however, the perforation is at the margin of the posterior superior segment of the drumhead the meato-mastoid operation may be tentatively performed, as a perforation in this region is significant of necrosis in the mastoid antrum, rather than of the tympanic cavity. The meato-mastoid operation would, therefore, establish adequate drainage and remove the morbid material and would probably effect a cure, i. e., a regeneration of the remaining diseased tissues.

THE CONTRAINDICATIONS TO THE MEATO-MASTOID OPERATION.

(a) All simple cases, cases curable by non-surgical and minor surgical treatment through the external meatus.

(b) All cases curable by the proper surgical attention to the epipharynx and the posterior ethmoidal and sphenoidal sinuses.

(c) Cholesteatoma of the tympanic cavity. The removal of the cholesteatoma from the tympanic cavity would dislocate the ossicles, and if this is done the radical mastoid operation should be performed as the chief object, the meato-mastoid operation, is defeated by the dislocation of the ossicles, namely, the preservation and improvement of the hearing.

(d) Epidural abscess with its atrium of infection through the tegmen tympani. It is obvious that in order adequately to drain an epidural abscess in this region the tympanic cavity should be exposed to give access to the atrium of infection which should be enlarged.

(e) Brain abscess with the atrium of infection through the tegmen tympani is a contraindication to the meato-mastoid operation for obvious reasons.

(f) Infection, suppuration, and necrosis of the labyrinth is a contraindication to the meato-mastoid operation as the affected portions of the labyrinth should be exposed to inspection and if necessary to surgical treatment.

The conditions referred to in paragraphs c, d, e and f call for the radical operation, as only by this method of exposure is adequate drainage and the removal of the morbid material certainly established.

It is true that the radical operation will cure all the conditions in which simple conservative treatment, minor surgical procedures, and the meato-mastoid operation are alleged to be indicated. It is also true that they may be cured in many cases by less radical procedures, hence the less radical procedures should be tried when there is a probability of a cure by them. Furthermore, the less radical measures preserve and often greatly improve the hearing even to the point of almost normal hearing. The radical operation, on the contrary often results in great impairment of the hearing, and, therefore, should only be used when the other methods of treatment have failed, or, for obvious reasons must fail, because by them adequate drainage and the removal of the morbid material can not be effected.

103 State Street.

DISCUSSION.

Dr. Jansen, Berlin: Ballenger's method is an old operation newly but not well named. Many years ago I recommended this operation in acute suppurations in which a long after treatment could be foreseen; for instance in scarlet fever. Other surgeons performed this operation when they did not consider a radical operation necessary, or did not feel competent to perform the radical operation. In general, I believe that fully as much can be accomplished with the simple mastoid operation; with the open method (as we employ it in the after treatment) and frequent changing of the dressings, free drainage is obtained. I mean that when one had proceeded as far as the lateral wall of the attic the question of the hearing comes into consideration, in chronic cases, before doing a complete radical operation. In cases in which the question of hearing was considered, I employed this method—that is, a radical mastoid operation which was not carried to completion I believe this method to be especially indicated when the operator does not feel that he can perform the radical operation with preservation of the ossicles, without dislocating the incus In 1893 I described this method—that is the radical operation with conservation of the ossicles and drum membrane, as well as the removal of the outer attic wall and the exposure of the posterior and inferior tympanic cavities Since then this method has been employed in about 200 cases with very satisfactory results in the majority, that is with healing and conservation of the hearing. Also in cases of cholesteatoma this method can often be employed that is, when the cholesteatoma is situated in the outer portion of the attic, where it begins to develop Dr. Ballenger justly lays great stress on the obliteration of all pockets. This is necessary in all operations on the mastoid. He, however, does not refer to the most important cavities, namely, the retrolabyrinthine and the perilabyrinthine cells. While the other diploetic cells are easily found, these perilabyrinthine and retrolabyrinthine cells must be hunted for. If not found they frequently lead to osteomyelitic suppurations of the pyramid and to meningitis For their radical exposure, I regard the burr as indispensable. It is not advisable to apply Thiersch grafts primarily in cases of tuberculosis. Every dressing irritates I pack the gauze in the external auditory canal very loosely · often do not employ any packing

Dr Albert H. Andrews, Chicago: In a number of cases of acute and subacute mastoiditis, or mastoid abscess, I have employed the meatomastoid method merely as an experiment to see if it would not give quicker results than the old method of open operation: and while I have not used it in more than a dozen cases belonging to this class I think that my cases healed a little quicker than if I had finished the operation after the old method of open packing. I am not ready to recommend it as the best and only method of handling these cases, but in view of the results in the cases in which I have used this, though only as an experiment, I have been well pleased with it.

Dr. J W Murphy, Cincinnati: I have no doubt that in some selected cases this operation described by Dr. Ballenger has a very distinct place, especially in those chronic cases in which the ear is so filled with granulation tissue and old chronic discharge, possibly of years' duration, such as we frequently meet following the diseases of childhood, scarlet fever, for instance, and in which the ear is so full of granulations that it is impossible to tell whether the bones are intact or not, but there is great destruction of the drum membrane In these cases if the radical operation is done, it is not certain that after healing has occurred and cicatricial tissue has formed in the middle ear, the hearing will not be much interfered with. However, if Dr. Ballenger's operation is done in these cases, what hearing the patient possesses will be retained, and in many cases it will be found that great improvement has occurred after operation, as by this method perfect drainage may be obtained. The discharge will cease and the patient will frequently have very good hearing I have done this operation since hearing Dr. Ballenger describe this method I operated the following day on a young woman 20 years of age who had always refused operation for fear of scarring, and also for fear that the little hearing she had would be decreased. Not a particle of hair was removed from her head She had always refused to have the head shaved, so I fastened a cap tight around the head and it was pulled back so as to give ample room for the operation. After the operation the posterior wound was closed, a simple gauze wick inserted into the ear for drainage, and in one week's time I had primary union and the discharge had almost ceased. I saw this patient the day before I left home. There wasn't a particle of discharge in the ear; hearing for the watch was about 12/40, and for ordinary conversation with the face turned away, across the room, fifteen or twenty feet. The patient could hear and repeat every word. So in this case a useful ear resulted and as no scarring will occur within this middle ear there is every reason to believe it is going to remain a useful ear.

Dr D T Vail, Cincinnati: Dr. Wendell Phillips of New York addressed the Oto-Laryngologic section of the Ohio State Medical Society at its recent meeting at Columbus on the present status of the mastoid operation as a cure for chronic suppurative otitis media, but made no mention of the meatomastoid operation In the discussion I asked him if this operation had a place in mastoid surgery. He said that he knew nothing about it from personal experience, but had formed an unfavorable opinion from reports. Dr. McKernon of New York at a recent meeting of the Laryngological, Rhinological and Otological Society at Pittsburg, in speaking of the dangers of the radical operation, said that 2 or 3 per cent of the patients died on the table or soon after, either from the anesthetic narcosis or from some accident in the operation such as plunging into the cerebral fossa or lateral sinus or from some other accident. He said that, though the statistics were suppressed, from 6 to 15 per cent. of the patients had facial paralysis and that from 25 to 45 per cent of them had recurrent attacks of suppuration, requiring a later operation In discussion it was said that one patient had had eleven operations for recurrent mastoiditis and was still uncured

The question is whether this operation which Dr. Ballenger has revised and perfected will not do away with at least some of these dangers This operation will to a certain extent guard the patient against facial nerve paralysis. With this operation, in my opinion, the present large percentage—25 to 45 per cent.—of recurrences will not take place, for the reason that the middle ear is amenable to local treatment. There is epidermatization of the middle ear, and because this important region is not disturbed and the débris can be cleaned out by the other methods which Dr. Ballenger did not speak of, but which is part of this treatment, the patients have the chance of avoiding recurrences, and the shortening of the length of time of the operation will guard the patient to a certain extent against fatal termination during or after the operation.

Dr. C F. Welty, San Francisco: The operations described by Dr. Heath and Dr. Ballenger are identical, and very easy to do. The operation described by Dr. Jansen is entirely different and requires most careful technical work; at the same time it is much more complete. If Dr. Jansen has given up this operation, which I consider superior to the Heath operation, I can not see that the Heath operation should be entitled to a place at all. Some time since, otologists as a class, have given up the removal of the ossicles for chronic suppuraton. They have also given up the Stacke operation for chronic suppuration, and the reason for this is that some of their cases remained uncured, while with the radical operation, practically all recovered. In a recent publication by Heath, he lays particular stress on the impairment of hearing. It is a well-known fact that practically all patients with chronic suppuration have a decided impairment of hearing. This impairment is due largely to the adhesive changes that have taken place as the result of the chronic irritation, and so long as such adhesions are not removed, the hearing will remain about the same. Those patients that have improved hearing following the Heath operation depend for their improvement on the mechanical removement of the pus and epidermis, which impede the sound waves Kerner says that hearing is always benefited following the radical mastoid operations, except in those cases in which there is a labyrinthine disease to start with I have had but two cases in which the hearing was made worse, and in these cases prior to operation the patient heard a whisper at twenty feet It is unusual to hear so well A very small percentage of patients are made worse by the radical operation About half remain the same, and the remaining have improvement dependent altogether on the amount of cicatricial tissue that covers the stapes, that is provided that the labyrinth is intact I have had two cases in which the hearing improved from a whisper at three feet prior to operation to twenty feet following the operation I consider this a very good result

Dr Vail is entirely wrong regarding mortality I consider the radical mastoid operation one of the greatest achievements in surgery because it avoids the possibility of death by cerebral complications and because it is attended with such a small mortality probably not more than 0 5 per cent and I am led to believe with Niemann of the Politzer clinic that this slight mortality is entirely dependent on unrecognized suppurative affections of the labyrinth If not too anxious to do a beautiful operation one need not fear facial paralysis

Dr Norval H Pierce, Chicago Kuster attempted to thrash out this whole thing when he published his paper in the *Deutsche Medicinische Wochenschrift* in 1889 His object was to establish a principle in the treatment of suppurating cavities having non collapsible walls—the antrum of Highmore the pleuritic cavity and the mastoid and middle ear Up to this time Wolff was perhaps the first to suggest a scientific operation for opening the mastoid cells, and he was followed by Schwartze, who more fully developed the idea, and who with the enormous amount of material at his command has done so much to place the surgery of the temporal bone on a sound basis Schwartze operated in chronic and acute cases alike by his method, removing the diseased area from the mastoid and leaving the cavum intact In a certain number of cases of chronic disease suppuration persisted but in many chronic cases cure was effected by this method To reduce the number of persisted cases and to shorten the after treatment Kuster not only removed the diseased bone within the mastoid but cleaned out the contents of the cavum as well when they were diseased He had difficulty in differentiating between suppuration limited to the mastoid cells and suppuration limited to the epitympanic space and the cavum tympani I think that these are the principles governing the whole matter If before operation it can be established that the cause of the suppuration is entirely limited to the mastoid cells, the operation first advocated by Jansen will have just as many recoveries as Schwartze's operation I scarcely think many more What Dr Jansen thinks of the operation may be gained from the fact that he has performed literally thousands of the radical operation and less than 200 of the other I have done this operation in cholesteatoma with a small marginal perforation retention of the tympanic membrane and ossicles with very good hearing power, and that is the very kind of a case in which Bezold recommends the operation Two years after the operation as far as the mastoid cells are concerned there is a cure The cavity is quite dry covered with epithelium A small pin head perforation remains in Shrapnell's membrane however and out of the epitympanic space (because the aditus has been preserved) there once in awhile rolls a clump of cholesteatoma, together with a putrid discharge This patient is not cured after two years, I think To day I heard from the clinic at the Illinois Eye and Ear Infirmary that the next to the last patient, operated on six months ago, is back with great pain and swelling back of the ear There will be many more relapses in this operation than after the radical Now as regards hearing because that is the only thing that recommends the operation, can we say we shall have better hearing after two or three years from this operation than from the radical operation? I am doubtful What good are the ossicles if they are necrotic or bound down by adhesions between the promontory and the long process of the incus or the handle of the malleus? I think that they are rather a detriment than otherwise Indeed, it is for just such conditions that ossiculectomy has been advised for the purpose of increasing audition

Dr J Holinger Chicago As I understand it this operation is indicated in chronic suppurations without cholesteatoma In these cases I have operated any number of times simply by the old Schwartze method, often removing sequesters, cleaning out all the cells and allowing the whole wound to fill in with granulations in two or three weeks I see complete recovery, stopping of the suppuration and normal hearing This operation answers the same purpose as the one described by Dr Ballenger

I think I assisted at the first radical mastoid operation in which Thiersch's grafts were made, in the spring of 1891 At that time the grafts were put in, about ten days after the first operation, on a granulating surface Does Dr Jansen always graft directly on denuded bone? Does he use the burr on such bone? I have never tried it, but I understand from other operators that in using the burr the superficial layer of the bone is seared and granulations do not come up as fast as in using the chisel Will Thiersch's grafts in such instances attach and grow as well as on a granulating surface?

For the last ten years I have not used any grafts at all but allowed the cavity to granulate and afterward obtained a smooth granulating surface by using nitrate of silver salves of different concentrations Afterward I simply apply xeroform powder without any dressing whatever I speak of the radical operation, in which the wound behind the ear is sewed shut at the operation and the after treatment is performed through the external meatus

Dr A Jansen, Berlin This method, in my opinion, does not in general come into consideration when dealing with acute cases In acute cases healing is much more rapid when the simple mastoid is performed and closed, primarily after Zaufall's method healing occurs in from ten to eighteen days Dr Pierce has correctly given the history of the newer methods and has given Kuster due credit It was also Kuster who stated that a method that required two years to bring about a healing (as was the case in the Schwartze operation in chronic cases) could not be classed as a practical one My experience allows me to make the assertion that in cases in which the ossicles were preserved good hearing was retained, while, on the other hand the hearing was often made worse when the ossicles were removed The diminution in the hearing was often so marked that the disappointment of my patients was very perceptible to me I repeat that the radical operation without the removal of the ossicles is my discovery and should, therefore, not be attributed to Heath Since 1893 I have taught this operation in my courses I usually apply Thiersch grafts immediately or at the first dressing in order to obtain healing in the shortest time possible I have had cases in which healing took place in less than three weeks The burr has never caused necrosis or a retarding of the healing I never allow the burr to become overheated

Dr William E Sauer, St Louis I think that Heath made the claim that there was marked improvement in the hearing even when the incus was absent in these cases Professor Jansen made the point that the operation had no special value when the connection between the incus and the stapes was lost

Dr William L Ballenger Chicago It might be appropriate to turn the men who originated this operation loose in a pen and let them decide it Dr Jansen declares that he is one of the earliest There are others who assert that they have done it a little earlier than he We are all glad to know that the value of the operation was recognized a long time ago Dr Jansen did not find the improvement in the hearing that is claimed by Dr Heath

Prof A Jansen Berlin I have performed the operation to conserve not to improve, the hearing and I have found that I could improve bad hearing The only indication in this operation is from the standpoint of good hearing naturally I have done nearly two hundred operations and in the majority of cases preserved good hearing

Dr William L Ballenger, Chicago My experience is too recent to estimate the value as to hearing In a period of one year I have done only sixteen operations of this kind one of which I have converted into the radical None of the others so far as I know, have shown any necessity of being converted into the radical So far as I know the patients are cured and the hearing up to date is conserved and very greatly improved One man now prefers to use the telephone with

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DR. C. F. WELTY, San Francisco: The operations described by Dr. Heath and Dr. Ballenger are identical, and very easy to do. The operation described by Dr. Jansen is entirely different and requires most careful technical work; at the same time it is much more complete. If Dr. Jansen has given up this operation, which I consider superior to the Heath operation, I can not see that the Heath operation should be entitled to a place at all. Some time since, otologists as a class, have given up the removal of the ossicles for chronic suppuration. They have also given up the Stacke operation for chronic suppuration, and the reason for this is that some of their cases remained uncured, while with the radical operation, practically all recovered. In a recent publication by Heath, he lays particular stress on the impairment of hearing. It is a well-known fact that practically all patients with chronic suppuration have a decided impairment of hearing. This impairment is due largely to the adhesive changes that have taken place as the result of the chronic irritation, and so long as such adhesions are not removed, the hearing will remain about the same. Those patients that have improved hearing following the Heath operation depend for their improvement on the mechanical removement of the pus and epidermis, which impede the sound waves Kerner says that hearing is always benefited following the radical mastoid operations, except in those cases in which there is a labyrinthine disease to start with I have had but two cases in which the hearing was made worse, and in these cases prior to operation the patient heard a whisper at twenty feet It is unusual to hear so well A very small percentage of patients are made worse by the radical operation About half remain the same and the remaining have improvement dependent altogether on the amount of cicatricial tissue that covers the stapes that is, provided that the labyrinth is intact I have had two cases in which the hearing improved from a whisper at three feet prior to operation to twenty feet following the operation I consider this a very good result

Dr Vail is entirely wrong regarding mortality I consider the radical mastoid operation one of the greatest achievements in surgery because it avoids the possibility of death by cerebral complications and because it is attended with such a small mortality probably not more than 0 5 per cent and I am led to believe with Neumann of the Politzer clinic that this slight mortality is entirely dependent on unrecognized suppurative affections of the labyrinth If not too anxious to do a beautiful operation one need not fear facial paralysis

Dr Norval H Pierce, Chicago Kuster attempted to thrash out this whole thing when he published his paper in the *Deutsche Medicinische Wochenschrift* in 1889 His object was to establish a principle in the treatment of suppurating cavities having non collapsible walls—the antrum of Highmore the pleuritic cavity and the mastoid and middle ear Up to this time Wolff was perhaps the first to suggest a scientific operation for opening the mastoid cells, and he was followed by Schwartze who more fully developed the idea, and who with the enormous amount of material at his command has done so much to place the surgery of the temporal bone on a sound basis Schwartze operated in chronic and acute cases alike by his method, removing the diseased area from the mastoid and leaving the cavum intact In a certain number of cases of chronic disease suppuration persisted, but in many chronic cases cure was effected by this method To reduce the number of persisted cases and to shorten the after treatment Kuster not only removed the diseased bone within the mastoid but cleaned out the contents of the cavum as well when they were diseased He had difficulty in differentiating between suppuration limited to the mastoid cells and suppuration limited to the epitympanic space and the cavum tympani I think that these are the principles governing the whole matter If before operation it can be established that the cause of the suppuration is entirely limited to the mastoid cells the operation first advocated by Jansen will have just as many recoveries as Schwartze's operation, I scarcely think many more What Dr Jansen thinks of the operation may be gained from the fact that he has performed literally thousands of the radical operation and less than 200 of the other I have done this operation in cholesteatoma with a small marginal perforation retention of the tympanic membrane and ossicles with very good hearing power, and that is the very kind of a case in which Bezold recommends the operation Two years after the operation, as far as the mastoid cells are concerned there is a cure The cavity is quite dry, covered with epithelium A small pin head perforation remains in Shrapnell's membrane however, and out of the epitympanic space, (because the aditus has been preserved) there once in awhile rolls a clump of cholesteatoma, together with a putrid discharge This patient is not cured after two years, I think To day I heard from the clinic at the Illinois Eye and Ear Infirmary that the next to the last patient, operated on six months ago, is back with great pain and swelling back of the ear There will be many more relapses in this operation than after the radical Now, as regards hearing, because that is the only thing that recommends the operation, can we say we shall have better hearing after two or three years from this operation than from the radical operation? I am doubtful What good are the ossicles if they are necrotic or bound down by adhesions between the promontory and the long process of the incus or the handle of the malleus? I think that they are rather a detriment than otherwise Indeed, it is for just such conditions that ossiculectomy has been advised for the purpose of increasing audition

Dr J Holinger, Chicago As I understand it this operation is indicated in chronic suppurations without cholesteatoma In these cases I have operated any number of times simply by the old Schwartze method, often removing sequesters, cleaning out all the cells and allowing the whole wound to fill in with granulations in two or three weeks I see complete recovery, stopping of the suppuration and normal hearing This operation answers the same purpose as the one described by Dr Ballenger

I think I assisted at the first radical mastoid operation in which Thiersch's grafts were made, in the spring of 1891 At that time the grafts were put in, about ten days after the first operation on a granulating surface Does Dr Jansen always graft directly on denuded bone? Does he use the burr on such bone? I have never tried it, but I understand from other operators that in using the burr the superficial layer of the bone is seared and granulations do not come up as fast as in using the chisel Will Thiersch's grafts in such instances attach and grow as well as on a granulating surface?

For the last ten years I have not used any grafts at all but allowed the cavity to granulate and afterward obtained a smooth granulating surface by using nitrate of silver salves of different concentrations Afterward I simply apply iodoform powder without any dressing whatever I speak of the radical operation, in which the wound behind the ear is sewed shut at the operation and the after treatment is performed through the external meatus

Dr A Jansen, Berlin This method, in my opinion does not in general come into consideration when dealing with acute cases In acute cases healing is much more rapid when the simple mastoid is performed and closed primarily after Zaufal's method, healing occurs in from ten to eighteen days Dr Pierce has correctly given the history of the newer methods and has given Kuster due credit It was also Kuster who stated that a method that required two years to bring about a healing (as was the case in the Schwartze operation in chronic cases) could not be classed as a practical one My experience allows me to make the assertion that in cases in which the ossicles were preserved good hearing was retained, while on the other hand the hearing was often made worse when the ossicles were removed The diminution in the hearing was often so marked that the disappointment of my patients was very perceptible to me I repeat that the radical operation without the removal of the ossicles is my discovery and should, therefore, not be attributed to Heath Since 1893 I have taught this operation in my courses I usually apply Thiersch grafts immediately or at the first dressing in order to obtain healing in the shortest time possible I have had cases in which healing took place in less than three weeks The burr has never caused necrosis or a retarding of the healing I never allow the burr to become overheated

Dr William E Sauer St Louis I think that Heath made the claim that there was marked improvement in the hearing even when the incus was absent in these cases Professor Jansen made the point that the operation had no special value when the connection between the incus and the stapes was lost

Dr William L Ballenger Chicago It might be appropriate to turn the men who originated this operation loose in a pen and let them decide it Dr Jansen declares that he is one of the earliest There are others who assert that they have done it a little earlier than he We are all glad to know that the value of the operation was recognized a long time ago Dr Jansen did not find the improvement in the hearing that is claimed by Dr Heath

Prof A Jansen, Berlin I have performed the operation to conserve not to improve the hearing and I have found that I could improve bad hearing The only indication in this operation is from the standpoint of good hearing naturally I have done nearly two hundred operations and in the majority of cases preserved good hearing

Dr William L Ballenger Chicago My experience is too recent to estimate the value as to hearing In a period of one year I have done only sixteen operations of this kind one of which I have converted into the radical None of the others so far as I know, have shown any necessity of being converted into the radical So far as I know the patients are cured and the hearing up to date is conserved and very greatly improved One man now prefers to use the telephone with the ear on which operation was done. Some patients can hear whispers at ten to thirty feet. The hearing in all cases has been markedly improved over that before the operation. Whether it will continue is a question.

The meato-mastoid operation is different, as I understand, from Professor Jansen's operation. In the meato-mastoid operation he does not remove the outer wall of the attic.

Prof. A. Jansen: In my modified operation I remove the lateral wall of the attic when necessary. When this is not necessary I conserve only the limbus. I take away the whole wall or leave the posterior part of the limbus, because when I do otherwise I consider it only a simple Schwartze operation.

Dr. William L. Ballenger: As to the value of paying attention to the ethmoid and sphenoid, my experience does not coincide with that of our distinguished guest. I have found that it does make a difference to open the ethmoid and sphenoid cells, because they drain posteriorly over the mouth of the Eustachian tube and keep up swelling and inflammation of the tube and consequently perpetuate the discharge from the tube into the middle ear, and I have found that by cleaning out the ethmoid and sphenoid cells I have been able to stop the process without the mastoid operation. The same is true of adenoids.

The Thiersch grafting is not an essential part of the mastoid operation, I am positive, whether done primarily or two weeks afterward, or, as in my cases, four and six months, and in one case two years afterward. If you will follow the technic as I have attempted to describe it I believe you will not have to use Thiersch grafts and will be able with the skin flaps and the other technic to obviate the necessity for Thiersch grafts. It will be a rare case, indeed, in which they will have to be used. Of course, my cases are few as compared with Dr. Jansen's and I can not compare my experience with his, but in my limited experience I am convinced that the Thiersch grafts are very rarely required.

This is the third time I have read a paper on the meato-mastoid operation, and I have had a chance to observe the temper of the audience in listening to the subject. Each time the audience is tamer and tamer and entertains the thought with more and more tolerance. I predicted six months ago that every man in the audience I was addressing would do more than 50 per cent. of his operations along this line rather than by the radical method. I repeat the prediction here.

RESTORATION OF THE CONJUNCTIVAL CUL-DE-SAC FOR THE INSERTION OF AN ARTIFICIAL EYE.*

M. WIENER, M.D.
ST. LOUIS.

Wherever great difficulty is encountered in combating a certain disease or condition, we also find numerous methods for its relief. Thus when we have an orbital socket contracted by scars from burns or otherwise, we have the choice of many modes of procedure for restoring its depth so that it may retain a glass eye. Knapp[1] states that of the numerous attempts in the past twenty-five years which have been made to remedy this unfortunate condition he has not seen a single case either of his own or of others where there had been more than temporary improvement; this, too, including cases where the only object was to fit a stump for the prothesis of an artificial eye. Fuchs says cases of extensive symblepharon are incurable.

Czermak[2] says there are many devices for relief of symblepharon, but few are successful. Nine years ago May[3] reported the restoration of the conjunctival cul-de-sac by means of Thiersch's skin grafts, in which he used a porcelain shell covered with grafts from the arm or thigh, the shell being held in place by three stitches in the lid. Hotz[4] and Woodruff[5] have employed similar means, using a lead plate covered with skin grafts; while Wilder[6] found paraffin plates most advantageous in keeping the grafts immovable.

Leslie Paton[7] successfully relieved a case of symblepharon by sewing a piece of mucous membrane from the roof of a frog's mouth. Maxwell[8] uses skin flaps from the lid with good results, but there remains a scar on the cheek and some objectionable puckering. There have been methods similar to these devised by Pravosud, LaGrange,[9] Wicherkiewicz, Bruch, Gidney,[10] and others, but all along the same lines.

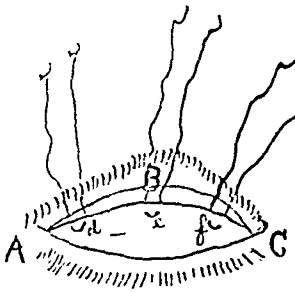

Figure 1.

My method has its use where the socket, while shrunken, has still a small amount of conjunctiva left. An incision (A, B, C, Fig. 1) is made through the conjunctiva and a flap, including only the conjunctiva, is carefully dissected down to the lid margin (A C, Fig. 1). This dissection after being started with a knife can easily and quickly be finished with a small curved blunt scissors. The dissection is then continued with the scissors so as to loosen the skin below the lid margin (A C to B, Fig. 2), leaving a raw surface toward the bulbar side extended from B to B′ and A to C (Fig. 2), and on the palpebral side A B C (Fig. 2). Then sutures with a needle on either end are introduced at the points d, e, f (Fig. 1), and passing them through the bottom of the newly made sulcus are brought through the skin at d′ e′ f′ (Fig. 2) and tied over a button. This gives a conjunctival covering for the lower lid and leaves the bulbar surface A B C B′ (Fig. 2) to be covered. This is done by covering a lead plate, previously shaped, with grafts from the thigh and placing carefully in position. A dressing is then applied and both eyes bandaged, the patient remaining undisturbed in bed for four days, when the outside dressings are replaced by clean ones without disturbing the plate. On about the eighth day the plate may be removed, cleaned and replaced. The glass eye can usually be worn by the tenth or fourteenth day. The stitches at d′ e′ f′ (Fig. 2) are not removed, but are tightened each day after the fourth day until they pull through. This is an additional help to holding the lower sulcus intact, as the internal scars resulting tend constantly to pull on the bottom of the sulcus and thus heighten the effect. It is important that these stitches should be allowed to pull through and not be removed before, for one is tempted to remove them after a week when the lower sulcus may appear too deep. I have made this mistake, thinking I had secured a lower sulcus of exaggerated depth, when, on removing the stitches, it rose too high and became almost obliterated, so that the stitches had to be replaced. The following cases are of patients treated in the above manner:

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

[1] Norris and Oliver, System Diseases of Eye.

[2] Augenärztlichen Operationen, 1893.

[3] Arch. Ophth., 1899, 182.

[4] Ann. Ophth., 1905.

[5] Ann. Ophth., April, 1903.

[6] The Journal A. M. A., 1906, xlvii.

[7] Lancet, April 23, 1904.

[8] Ophth. Rev., 1903.

[9] Arch. d'Ophth., 1905.

[10] Indian Med. Gaz., 1904.

Case 1.—*Patient.*—Miss H. P., aged 28, of Helena, Mont.

History.—Lost left eye, when 8 years of age, following measles. Evisceration performed by a prominent ophthalmologist in Kansas City. She was able to wear an artificial eye for six years, when the socket became inflamed, contracted, and expelled the eye. Was treated until inflammation subsided, and then, being unable to wear a glass eye, was operated on three successive times by one ophthalmologist, and once by another, without success. Since then she had been told by several others that nothing could be done and that further operative procedure would be useless. She was compelled to wear dark glasses to hide the deformity, which was very embarrassing.

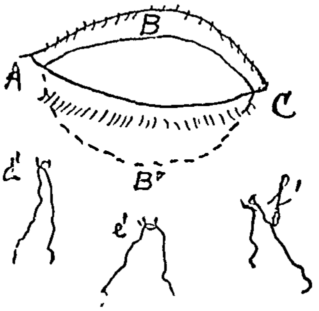

Figure 2.

Examination.—Patient came to me for examination Oct. 8, 1904, and examination showed a much shrunken socket, traversed by scars, with no lower sulcus and a very shallow upper one.

Operation.—On Oct. 11, 1904, the above described operation was performed at Washington University Hospital under local anesthesia, skin for the grafts being taken from the arms. Both eyes were bandaged and not disturbed until the fourth day, when the outside dressing was removed, stitches tightened, and fresh dressing applied. October 24 the dressings were entirely removed, lead plate taken out, and a reform eye inserted. This was worn continuously for three days, being taken out only to be cleaned; and on October 27 the eye was worn all day and taken out at night. Two of the stitches were pulled out on the eleventh day and the inner one pulled out on the fifteenth. The photograph (Fig. 3), shows the appearance of patient wearing a Snellen reform artificial eye three years after the operation. As will be seen, there is practically no sinking of the upper lid, while the eye has good movement.

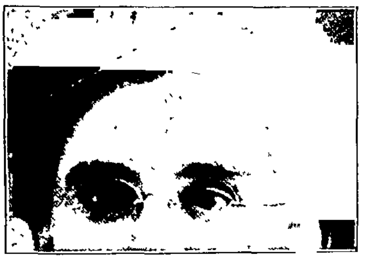

Figure 3.

Case 2.—*Patient.*—Miss N. S., aged 17, Macedonia, Ill., came to Washington University Hospital Feb. 5, 1907.

History.—The patient had an atresic left eye due to a wound from a 22-caliber bullet, which had gone through the lower lid and lodged in the globe. There was a gap in the center of the lower lid margin and almost complete symblepharon of lower lid.

Operation.—The eye was enucleated the following day, at the same time the edges of the lower lid were approximated. On February 27 the above described operation was done and the *patient treated in much the same manner as in* Case 1. She is now able to wear a well-fitting artificial eye.

Cases 3 and 4.—Two other patients also were operated on at the Jewish Hospital, one on Nov. 26, 1907, and the other on Dec. 27, 1907. The immediate results in these cases have been good, but I have not thought it wise to report them in detail as they are of too recent date.

My reason for presenting this method is that my greatest difficulty heretofore, and also of my friends whom I have questioned, has been to establish a sufficiently deep lower sulcus. This operation has seemed to have overcome this difficulty.

DISCUSSION.

Dr. F. C. Todd, Minneapolis: In attempting to restore a partial or complete obliteration of the cul-de-sac we must consider the fact that obliteration has occurred as a result of cicatricial contraction following erosion, trauma or burns (mechanical or chemical, as lime), and that after operation the same tendency exists, and is even aggravated by the trauma of the operation so that resulting failure occurs after ordinary implantation of grafts in the course of a few months. Were it not for the work of Drs. May, Hotz, Woodruff and Wilder, I should feel that success in severe cases at least could not be attained unless the skin-graft is anchored as in the Weeks operation, described at the Saratoga session, or by the method described by Dr. Wiener. You will remember that Dr. Weeks dissects clear to the periosteum and fastens the large skin-graft to this periosteum, thereby effectually holding the skin in place and preventing later contraction. He also uses plates of dentists' modelling wax to hold the grafts *during the* healing process. The resulting cul-de-sac is very deep, which is no disadvantage, however, as an artificial eye can be made to order, if necessary, to fill the cavity and need not extend to the upper limits. Dr. Wiener emphasizes the importance of anchorage and recognizes this principle in an admirable manner, for the tissues, being cut through by the sutures during the healing process, make permanent ligatures, so to speak, of the resulting cicatricial bands which extend from the lining of the cul-de-sac to the skin surface of the cheek. His *suggestion of* the utilization of remaining conjunctiva, where it exists, as a lining for the lid, is good, for the normal position of the lid margin can thereby be better maintained than is the case when skin is used, and entropion or ectropion is less liable to result. These cases are rare and the experience of one operator is usually not great, though Dr. Weeks wrote me last fall that he had performed seventeen successful operations on ten patients (some requiring an operation for each lid), and in my limited experience since hearing his paper I have followed his method. At first I used the dentists' wax plates and later plates covered with paraffin after Dr. Wilder's plan, using aluminum instead of lead, however. It can be as readily moulded and secured of any dental supply house. I discarded *paraffin, as it came off in a few days anyway*, and I found that the aluminum could be made smooth by burnishing the edges after shaping the plate at the time of the operation. In the Weeks operation a large plate is necessary and I had difficulty in reinserting; therefore, I had some plates made. These are in two sections, and by loosening the thumb-screw will slide on one another (thus coming together into half the size), and then can be removed easily, and after reinserting closed, can be spread out and fastened by the thumb-screw. They are made of German silver, *gold-plated, and are skeleton in* form (they could be made solid, however), and adjustable to different sizes. The description and illustration of this plate will be published in the Ophthalmic Record.

Dr. F. C. Hotz, Chicago: In the attempt to enlarge or to restore the conjunctival sac for the insertion of an artificial eye, the main object must be to restore the lining of the inside of the lower lid, because if we have a well-marked lower lid the lower edge of the artificial eye can rest securely in a cul-de-sac, and that is the main thing. When there is *conjunctiva* left. the plan that was followed here is certainly very good, to utilize the remaining conjunctiva as a lining for the lower lid. We do not need much of the recess in the upper lid to hold the artificial eye, but the lower lid must afford a deep recess for the artificial eye or it is apt to slide out. In fixing this lower lid conjunctival flap I have been using a plate on the lid to keep the flaps smooth. To fix the plate I put the sutures through its lower edge to fasten it with the skin. That absolutely insures smoothness. I leave it in until the stitches cut through. If necessary, the wound of the socket can be filled in with a Thiersch graft. fastened down by sutures. a plug of white wax moulded to the form and the depth of the sac is put in, the lids closéd over it, and a pressure bandage applied to hold it firm.

We hear much about shrinkage of the flaps. They of course shrink according to the lessened resistance of the surrounding parts. If it is fixed, in ectropium of the upper lid. for instance. to the free lid border and the upper border of the cartilage, you will be surprised how little shrinkage takes place. for here the graft is attached to parts which can not be moved. and therefore successfully prevent the shrinkage of the flap. Where there are movable borders. however. the shrinkage will take place. and it may be necessary to repeat some grafting. The first case I operated on, simply to enlarge the socket. I took out the scar tissue, put in a pretty large flap. It shrank, of course. within the first three months. but I saw the patient several times in after years, and to my satisfaction saw that the flap had not shrunk visibly any more than the first three months.

Mr. E. Treacher Collins, London, Eng.: I have had some very satisfactory results in these cases of contracted socket from the employment of an operation devised by Dr. Maxwell of Dublin. As the first step, make an incision through the conjunctiva at the bottom of the cul-de-sac, then one through the skin of the lower lid of about the same length as the other. Mark out on the eyelid a flap of skin: you dissect up that flap but leave it attached at the center. Now make a tunnel between the two incisions—under the lid. Then pass a suture through the angle of the flap and carry it up under this bridge of tissue and insert it at this point. You then have a flap the center of which is held down. You afterward stitch up the gap in the lower lid. At the conclusion you put in a glass shell, like a glass eye with the cornea taken out. to allow drainage. I used to try to get rid of these cases, but since the adoption of this operation I am rather pleased when they come along, for I have had some very satisfactory results.

Dr. W. H. Wilder. Chicago: If the plate is covered with some material such as paraffin. it is possible, even after it is in place. inasmuch as the graft then lines the pocket, to insert stitches that will anchor it in position. This, in simple cases, is not necessary. One advantage of having a plate covered with some material like paraffin. is the case in handling the thin graft which has such a tendency to roll up. but which adheres so evenly and smoothly to the paraffin surface. Furthermore. with such a covering of the plate as paraffin. one can feel sure that the cornea will not suffer injury.

Dr. M. Wiener. St. Louis: We all know that in taking the flaps *in toto* there is contraction, but there is very little contraction with the Thiersch grafts. Dr. Todd objected to inserting the lead plate because it is rough. He uses aluminum. I have used a lead plate dipped in paraffin. which makes it smooth. The Maxwell operation is mentioned in my paper, but not described. The objection I stated to this operation was that there was a good deal of puckering in the lower lid. As I have said. my reason for presenting this method is that my greatest difficulty heretofore, and also of my friends whom I have questioned. has been to establish a sufficiently deep lower sulcus. This operation has seemed to overcome this difficulty.

Treatment of Circulatory Disorders.—Paul Franz, of Bad Nauheim. states in the *Dietetic and Hygienic Gazette*, July, 1908. that the one great and fundamental factor in circulatory disorders of all kinds is to restore normal metabolism by means of physical treatment and diet.

Clinical Notes

LARYNGECTOMY FOR CARCINOMA OF THE LARYNX.

REPORT OF TWO CASES, SPECIMENS EXHIBITED.*

LA FAYETTE PAGE, A.M., M.D.
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INDIANAPOLIS.

Case 1.—*Patient.*—E. L. L., age 72, a mechanic, was first examined by me Sept. 5, 1903. He had always had excellent health until he lost his voice from a cold during the previous spring. He had used tobacco constantly and alcohol occasionally. Nothing in the man's appearance indicated dissipation. The hoarseness had been persistent and occasionally a little blood came from his throat. There had been more or less constant pain in the left ear radiating from the throat.

Examination.—A laryngoscopic examination showed a growth rather larger than a bean, in the anterior commissure of the vocal cords. apparently springing from the under surface of the left cord. There was considerable infiltration about the left cord. The surface of the tumor was irregular and nodular, very hard and light in color, and the left cord perfectly immobile. A saturated solution of iodid of potassium was prescribed and the patient was kept on large doses until it was found that the drug did not retard the growth of the tumor in the least. Sections were removed and submitted to two pathologists. Both reported that the growth was a carcinoma. By the first of the following February—five months—the growth had increased to such an extent and breathing was so labored that death from suffocation was evidently near at hand. The case afforded almost every clinical evidence of cancer.

Case 1.

Case 2.

Case 1.—Mr. E. L. Long. Left half of larynx removed for carcinoma. Feb. 5, 1904. age 72. Now has fair voice and good health at 76.

Case 2.—Mr. J. S. Farrell. Left half of larynx removed for carcinoma, Dec. 26, 1904, age 52. At present in fair voice and good health.

Operation.—A radical operation was performed Feb. 5, 1904. in which the left half of the larynx was removed entire. The patient was placed in the Trendelenburg-Rose position and chloroform administered. The first incision extended from the hyoid bone to the sternum and the tissues were dissected and pushed aside, exposing the laryngeal and tracheal cartilages.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty ninth Annual Session, held at Chicago, June, 1908.

A low tracheotomy was done and an ordinary large canula was introduced and secured with tape. The chloroform was then administered through a rubber tube connected with the chloroform apparatus and the canula. The thyroid cartilage was then split (with difficulty owing to calcification) in the median line with bone forceps and the larynx laid wide open and examined with a strong head light. The interior of the larynx was then painted with cocain and adrenalin. The disease was found to be confined to the left half. The left half of the thyroid and cricoid cartilages were then removed by freeing the surrounding tissues and pushing aside the perichondrium. Great care was necessary in separating the laryngeal tissues from the esophagus. Several strips of iodoform gauze were placed in the laryngeal cavity and brought out through the lower part of the wound and secured. The upper part of the larynx was closed with sutures and the dressings placed.

Later History—The subsequent treatment required close and careful attention. The tracheal tube was kept in two days. It was several days before fluids or solids could be swallowed without passing out the wound, so he was nourished through a tube. He made a good recovery, and now, at the end of four years, is 76 years old, in good health and able to earn his living (Fig. 1).

CASE 2.—*Patient.*—J. S. F., age 52, contractor, had an excellent tenor voice and often sang in choirs. He used tobacco excessively and at one period of his life used alcohol. His father, a soldier, died of dysentery during the war, at the age of 40; his mother died at 65 from an accidental fall. His six brothers and sisters were all living and healthy. There was no history of malignant disease or syphilis. The patient was an excellent specimen of manhood and had always enjoyed good health with the exception of chronic bronchitis.

Course of Disease.—A persistent hoarseness set in during the spring of 1904, following an acute laryngitis. During this attack a small papillomatous-looking growth appeared growing from below the cords in the anterior commissure. During the months of May and June applications of argyrol were made to the larynx with other local treatment and a saturated solution of the iodids administered internally. The progress of the growth was daily watched until about the first of July when sections were removed and microscopically examined. Each specimen was reported to be unmistakably a flat-celled carcinoma. After these examinations the patient took several weeks rest in the woods of Wisconsin. When he returned I advised an immediate and radical operation, and at that time a thyrotomy would have been, in my opinion, sufficient. After this advice (September 1) the patient was not seen again until December 20, when he called at my office and said that he was ready to have the radical operation performed, if I thought best. In the meantime, he said, he had consulted Dr. E. Fletcher Ingals of Chicago, who said that the growth was suspicious but that he hoped it was only a large papilloma. He removed the tumor intralaryngeally, and sent the specimen to Professor Hektoen for examination. His report was: "The specimen which you sent me is a flat celled carcinoma." This was followed by local treatment for a few days and then the patient was permitted to return home. He again visited Dr. Ingals two months later, who found that the growth had returned. The patient was then advised to undergo a radical operation. After he had given me this history, an examination of the larynx was made and it was found that the disease had made rapid progress, but was as yet apparently confined to the left half of the larynx.

Operation.—After explaining to the patient his chances for recovery, and that a complete laryngectomy would probably be necessary, it was decided to have the operation performed at once, Dec. 26, 1905, at the Deaconess Hospital. The teeth and upper respiratory tract were rendered as nearly aseptic as possible. The trachea was prepared by frequent injections of antiseptic oils and sprays. The patient was placed on the table in the Trendelenburg-Rose position and the chloroform was administered first by mouth and then by tube and canula. The different steps of the operation were about the same as detailed in Case 1. Extensive removal, including a part of the right thyroid cartilage and vocal cord, in addition to the entire left half of the larynx and the adjacent lymphatic glands, was found necessary. In separating the cartilages from the esophagus, the esophageal tube was introduced and found to be of decided help.

Later History.—In the after-treatment of this case there were a number of complications. The old bronchitis was troublesome and at one time pneumonia was threatened. A very rapid pulse and irregular and disturbed respiration, due probably to interference of functions of the pneumogastric, were finally corrected with digitalis and strychnia. After the wound healed the *x*-ray was used with apparent good effect in preventing a return. Three and one-half years have elapsed. the allotted time. the laryngeal cavity looks exceedingly healthy, and the patient has been perfectly well since. (Fig. 2).

The Hahn canula was not found necessary in either of these cases.

30 Willoughby Building.

DOUBLE-HEADED MONSTROSITY.

GEORGE E. OREBAUGH, M.D.
HIGHLAND, OHIO.

Parents.—Mrs. C. L. M., aged 25, weight 108 pounds; had been in good health for several years, except for a leucorrheal discharge. She is perfectly developed. Her husband has no bad habits and no deformities. The family history on both sides is good, there being no abnormal births or twins in either family.

History.—I was called to see the woman during the latter months of pregnancy and found her suffering from persistent vomiting and from intense pain in the right side. On March 6, 1900, I was again called to see her. After protracted labor she gave birth to a female child which died in a few minutes. The breech presented, making the delivery difficult, and in addition the placenta was adherent. The mother is now in good health and has since given birth to a normal child.

Description of Child.—The child had one body, perfect in form from shoulders to feet. There were two legs and two arms, three spinal columns and two perfectly formed heads and necks, each separate and distinct. Each head measured fourteen inches in circumference. Other measurements were as follows: Across the shoulders, 8 inches; around thorax, 15½ inches; length of arm, 8½ inches; length of legs, 11 inches; length of body, 20 inches; weight, 14 pounds.

A CASE OF SUPPURATIVE PYELONEPHRITIS, WITH SPECIMEN.

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This case and specimen is presented as graphically illustrating possible sequelæ of gonorrhea and teaching (1) the necessity of care in pronouncing gonorrhea cured, i. e., that there will be no sequelæ; (2) the necessity of gentleness in genitourinary surgery; (3) the rapidity with which infection in the genitourinary tract may prove fatal.

The specimen was obtained in the following case:

History.—M., male, aged 36, occupation, logger, had gonorrhea in 1895. During the last two years he had had some trouble in voiding urine, but only when drinking heavily. At this time he had also a slight urethral discharge; otherwise, no symptoms. He was never incapacitated from work. On June 6, 1907, he had been drinking heavily, but had attended to his duties. On this date he had acute retention and the sound was used to relieve same. Twenty-four hours later, June 7, he came to Seattle and presented himself for treatment at the local hospital. His condition was referred to the visiting physician as that of a case of gonorrhea, with retention, complicated by orchitis because of the swollen scrotum. He was catheterized with difficulty and two or three ounces of bloody urine obtained; catheterization was repeated after four hours. Twenty-four hours later the case was referred to me.

left, the plan that was followed here is certainly very good, to utilize the remaining conjunctiva as a lining for the lower lid. We do not need much of the recess in the upper lid to hold the artificial eye, but the lower lid must afford a deep recess for the artificial eye or it is apt to slide out. In fixing this lower lid conjunctival flap I have been using a plate on the lid to keep the flaps smooth. To fix the plate I put the sutures through its lower edge to fasten it with the skin. That absolutely insures smoothness. I leave it in until the stitches cut through. If necessary, the wound of the socket can be filled in with a Thiersch graft fastened down by sutures, a plug of white wax moulded to the form and the depth of the sac is put in, the lids closed over it, and a pressure bandage applied to hold it firm.

We hear much about shrinkage of the flaps. They of course shrink according to the lessened resistance of the surrounding parts. If it is fixed in ectropium of the upper lid, for instance, to the free lid border and the upper border of the cartilage, you will be surprised how little shrinkage takes place, for here the graft is attached to parts which can not be moved, and therefore successfully prevent the shrinkage of the flap. Where there are movable borders, however, the shrinkage will take place and it may be necessary to repeat some grafting. The first case I operated on simply to enlarge the socket, I took out the scar tissue, put in a pretty large flap. It shrank of course within the first three months, but I saw the patient several times in after years, and to my satisfaction saw that the flap had not shrunk visibly any more than the first three months.

Mr. E. Treacher Collins, London, Eng.: I have had some very satisfactory results in these cases of contracted socket from the employment of an operation devised by Dr. Maxwell of Dublin. As the first step, make an incision through the conjunctiva at the bottom of the cul de sac, then one through the skin of the lower lid of about the same length as the other. Mark out on the eyelid a flap of skin; you dissect up that flap but leave it attached at the center. Now make a tunnel between the two incisions—under the lid. Then pass a suture through the angle of the flap and carry it up under this bridge of tissue and insert it at this point. You then have a flap the center of which is held down. You afterward stitch up the gap in the lower lid. At the conclusion you put in a glass shell, like a glass eye with the cornea taken out, to allow drainage. I used to try to get rid of these cases, but since the adoption of this operation I am rather pleased when they come along, for I have had some very satisfactory results.

Dr. W. H. Wilder, Chicago: If the plate is covered with some material such as paraffin, it is possible, even after it is in place, inasmuch as the graft then lines the pocket, to insert stitches that will anchor it in position. This, in simple cases, is not necessary. One advantage of having a plate covered with some material like paraffin is the ease in handling the thin graft which has such a tendency to roll up, but which adheres so evenly and smoothly to the paraffin surface. Furthermore, with such a covering of the plate as paraffin, one can feel sure that the cornea will not suffer injury.

Dr. M. Wiener, St. Louis: We all know that in taking the flaps *in toto* there is contraction, but there is very little contraction with the Thiersch grafts. Dr. Todd objected to inserting the lead plate because it is rough. He uses aluminum. I have used a lead plate dipped in paraffin which makes it smooth. The Maxwell operation is mentioned in my paper, but not described. The objection I stated to this operation was that there was a good deal of puckering in the lower lid. As I have said, my reason for presenting this method is that my greatest difficulty heretofore, and also of my friends whom I have questioned, has been to establish a sufficiently deep lower sulcus. This operation has seemed to overcome this difficulty.

Treatment of Circulatory Disorders.—Paul Franz, of Bad Nauheim, states in the *Dietetic and Hygienic Gazette*, July, 1908, that the one great and fundamental factor in circulatory disorders of all kinds is to restore normal metabolism by means of physical treatment and diet.

Clinical Notes

LARYNGECTOMY FOR CARCINOMA OF THE LARYNX.

REPORT OF TWO CASES, SPECIMENS EXHIBITED*

LAFAYETTE PAGE, A.M., M.D.
Clinical Professor of Diseases of Nose, Throat and Ear, Indiana University School of Medicine
INDIANAPOLIS

Case 1.—*Patient.*—L. L. L., age 72, a mechanic, was first examined by me Sept. 5, 1903. He had always had excellent health until he lost his voice from a cold during the previous spring. He had used tobacco constantly and alcohol occasionally. Nothing in the man's appearance indicated dissipation. The hoarseness had been persistent and occasionally a little blood came from his throat. There had been more or less constant pain in the left ear radiating from the throat.

Examination.—A laryngoscopic examination showed a growth rather larger than a bean in the anterior commissure of the vocal cords, apparently springing from the under surface of the left cord. There was considerable infiltration about the left cord. The surface of the tumor was irregular and nodular, very hard and light in color, and the left cord perfectly immobile. A saturated solution of iodid of potassium was prescribed and the patient was kept on large doses until it was found that the drug did not retard the growth of the tumor in the least. Sections were removed and submitted to two pathologists. Both reported that the growth was a carcinoma. By the first of the following February—five months—the growth had increased to such an extent and breathing was so labored that death from suffocation was evidently near at hand. The case afforded almost every clinical evidence of cancer.

Operation.—A radical operation was performed Feb. 5, 1904, in which the left half of the larynx was removed entire. The patient was placed in the Trendelenburg-Rose position and chloroform administered. The first incision extended from the hyoid bone to the sternum and the tissues were dissected and pushed aside, exposing the laryngeal and tracheal cartilage-

Case 1

Case 2

Case 1.—Mr. L. L. Long. Left half of larynx removed for carcinoma Feb. 5, 1904, age 72. Now has fair voice and good health at 76.

Case 2.—Mr. J. S. Littell. Left half of larynx removed for carcinoma Dec. 26, 1904, age 52. At present in fair voice and good health.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

A low tracheotomy was done and an ordinary large canula was introduced and secured with tape The chloroform was then administered through a rubber tube connected with chloroform apparatus and the canula The thyroid cartilage was then split (with difficulty owing to calcification) in the median line with bone forceps and the larynx laid wide open and examined with a strong head light. The interior of the larynx was then painted with cocain and adrenalin. The disease was found to be confined to the left half The left half of the thyroid and cricoid cartilages were then removed by freeing the surrounding tissues and pushing aside the perichondrium. Great care was necessary in separating the laryngeal tissues from the esophagus Several strips of iodoform gauze were placed in the laryngeal cavity and brought out through the lower part of the wound and secured The upper part of the larynx was closed with sutures and the dressings placed

Later History—The subsequent treatment required close and careful attention The tracheal tube was kept in two days It was several days before fluids or solids could be swallowed without passing out the wound so he was nourished through a tube He made a good recovery, and now at the end of four years, is 76 years old, in good health and able to earn his living (Fig 1)

Case 2—*Patient*—J S F, age 52, contractor, had an excellent tenor voice and often sang in chorus He used tobacco excessively and at one period of his life used alcohol His father, a soldier died of dysentery during the war, at the age of 40, his mother died at 65 from an accidental fall His six brothers and sisters were all living and healthy There was no history of malignant disease or syphilis The patient was an excellent specimen of manhood and had always enjoyed good health with the exception of chronic bronchitis

Course of Disease—A persistent hoarseness set in during the spring of 1904, following an acute laryngitis During this attack a small papillomatous looking growth appeared growing from below the cords in the anterior commissure During the months of May and June applications of argyrol were made to the larynx with other local treatment and a saturated solution of the iodids administered internally The progress of the growth was daily watched until about the first of July when sections were removed and microscopically examined Each specimen was reported to be unmistakably a flat celled carcinoma After these examinations the patient took several weeks rest in the woods of Wisconsin When he returned I advised an immediate and radical operation, and at that time a thyrotomy would have been, in my opinion, sufficient After this advice (September 1) the patient was not seen again until December 20, when he called at my office and said that he was ready to have the radical operation performed, if I thought best In the meantime, he said, he had consulted Dr E Fletcher Ingals of Chicago, who said that the growth was suspicious but that he hoped it was only a large papilloma He removed the tumor intralaryngeally, and sent the specimen to Professor Hektoen for examination His report was 'The specimen which you sent me is a flat celled carcinoma This was followed by local treatment for a few days and then the patient was permitted to return home He again visited Dr Ingals two months later, who found that the growth had returned The patient was then advised to undergo a radical operation After he had given me this history, an examination of the larynx was made and it was found that the disease had made rapid progress, but was as yet apparently confined to the left half of the larynx

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This case and specimen is presented as graphically illustrating possible sequelæ of gonorrhea and teaching (1) the necessity of care in pronouncing gonorrhea cured, i. e., that there will be no sequelæ. (2) the necessity of gentleness in genitourinary surgery. (3) the rapidity with which infection in the genitourinary tract may prove fatal.

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Examination.—There was evidence of commencing uremic coma; extravasation of urine, extending over the perineum, scrotum and half way up to umbilicus.

Operation.—A suprapubic cystotomy was done to relieve the retention. No attempt was made toward diagnosis. One quart of reddish-black, grumous, ammoniacal urine was evacuated and the bladder mucous membrane came away in large shreds. The patient died in eight hours without recovering consciousness

Autopsy.—Postmortem findings were as follows: At the bulbous portion of urethra, was a stricture (Fig. 1, A). Along side of this, but slightly posterior, was found a urethral calculus (Fig. 1, B): size, ⅝ by 5/16 inches, or 1.5 by 8.5 cm.; weight, 8.5 gms., or a little over 2 drams; composition, phosphatic calcium magnesium. A cavity was plainly visible where the stone in the urethra lodged (Fig. 1, C), and a piece of catheter has been passed through the opening caused by the stone (Fig. 1, D). The prostate was found to be the seat of an abscess (Fig. 1, E) and the bladder was absolutely denuded of all mucous membrane (Fig. 1, F).

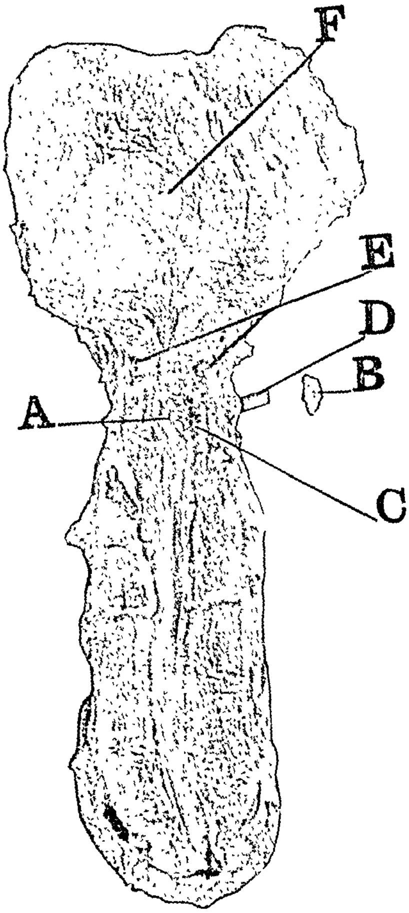


Fig. 1.—The urethra laid open; A, point of stricture; B, urethral calculus; C, cavity in which calculus lodged; D, piece of catheter passed through opening caused by stone; E, seat of abscess in prostate; F, bladder denuded of mucous membrane.

Left Kidney.—Macroscopic Findings: Size, 6 by 10 cm. (2¼ by 4 in.); weight, 139.3 gms. (4½ oz.); surface irregular, lobulated and knotty; capsule, thin and tight; strips with ease; in cortex, near surface, abscess (Fig. 2A), 1 by 1.5 cm. (⅜ by ⅝ in.) in size, filled with thick cheesy pus. Pelvis and calices enlarged; membrane, thick and rough; ureter, distended and thickened, coated with flakes of fibrin.

Microscopic Findings: Micro-organisms *Bacillus coli communis*, *Staphylococcus pyogenes albus*. Cortex, glomeruli congested, showing marked diapedesis of the red blood cells, a thinning distention and rupture of the capsular epithelium and membrane; in other places, the epithelial cells are lifted and separated from the basement membrane. The appearance of the tufts is irregular, having lost their definition and convoluted arrangement. In the areas of interstitial degeneration, the tufts are either partially or totally destroyed. The convoluted and straight tubules show a mild degree of swelling, with a paling and disappearing of the nuclei; they give the appearance of moderate amyloid degeneration. The lumens of the tubules are not distended, but flat and normal in appearance; they contain no casts or moulds. The interstitial tissue, shows perhaps, the greatest change of all. There is present a

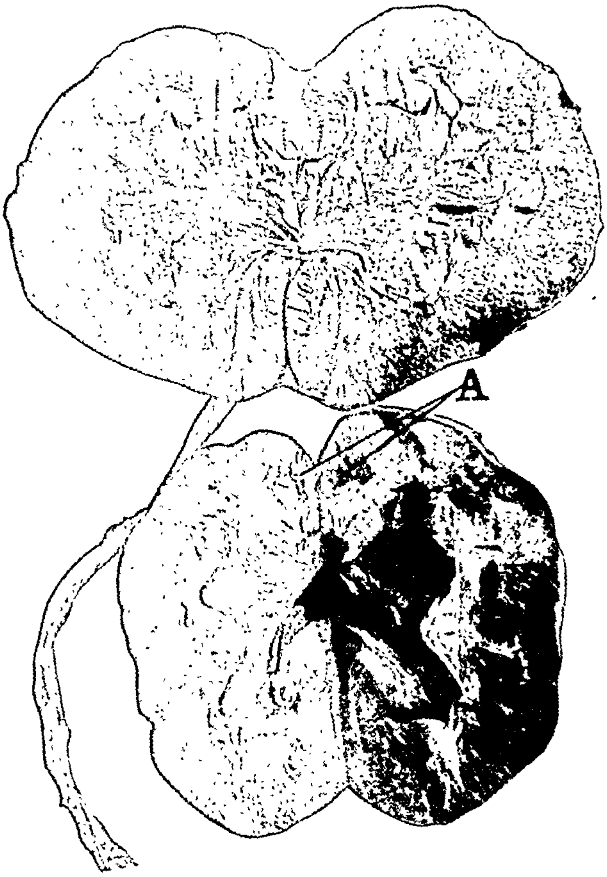


Fig. 2.—Left kidney split open showing an abscess (A) in cortex.

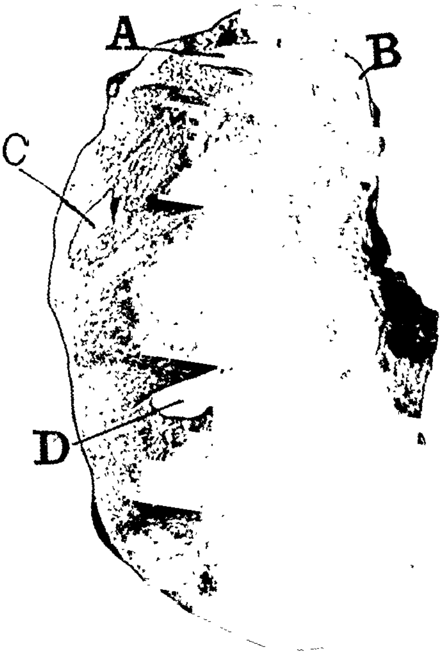


Fig. 3.—Left kidney showing abscesses A, B, C, D, seen only from the external surface.

marked active congestion, leucocytes often predominating the field. In other places, there is a wide and free dissection of the interstitial tissue, with rupture of glomeruli and tubules: many of these are communication cyst cavities. Between the tubules are small collections of pus. The dissection has separated the straight tubules and extends clear to the renal capsule —in many places resembling the appearance of emphysematous lung tissue, being a fine, irregular network of stroma tissue, creating spaces unlined with epithelium or cells. In Figure 3 —left kidney—the white pieces of paper show other abscesses seen only from external surface.

Right Kidney.—Macroscopic Findings: Size, 8 by 11 cm. (3 by 4½ in.): weight, 217.70 gm. (7 ounces); heart-shaped; surface, slightly lobulated, smooth, capsule, adherent; cortex, 1.5 to 2.5 cm. (½ to 1 in.) thick, firm, no abscesses; pelvis large, irregular; ureter, large thickened walls; pelvis dilated mucous membrane thickened, congested, and coated with patches of fibrin.

Microscopic Findings.—These show a similar picture to that of the left kidney, with the active congestion well marked and hemorrhagic infiltration of the tufts. The blood vessels show no characteristic changes, except the venous system, which is slightly dilated, with distortion of the capillaries.

TWO ADENOMATA OF THE ISLANDS OF LANGERHANS.

MARY ELIZABETH MORSE, M.D.
Pathologist to the New England Hospital for Women and Children.
BOSTON.

Adenomata of the islands of Langerhans have seldom been described in the literature, probably because they are accidental findings in the routine examination of autopsy material rather than because they are actually very rare. Nichols,[1] in 1902, reported one which he believed was the first of the kind on record, and Helmholtz,[2] in 1907, added a second case. The reader is referred to their articles for a discussion of several other tumors described as arising from the islands of Langerhans, but apparently of doubtful origin. A search through the literature reveals no additional cases. Recently, however, two tumors of this kind have come under my observation. The first was found at the New England Hospital in the service of Dr. Clara J. Alexander; the second at the Boston City Hospital by Dr. O. R. Mabee, through whose courtesy I am enabled to report it. Both were discovered at autopsy, and have no bearing on the clinical histories or the other anatomic changes.

The first growth was from the pancreas of a woman, aged 44, dying of peritonitis. The gland appeared normal macroscopically, and the tumor was found in the specimen from the splenic end saved for microscopic examination.

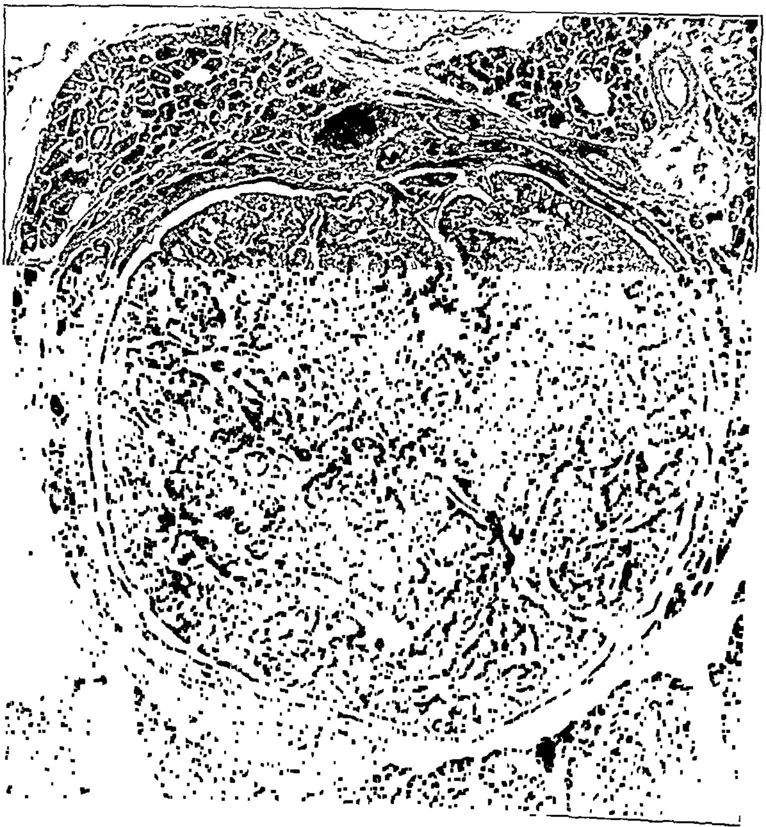
Examination of First Tumor.—It forms a sharply defined encapsulated nodule, 5 mm. (¼ in.) in diameter, situated in the midst of the pancreatic tissue. It is composed of interlacing strands of cells supported by a connective tissue framework carrying blood vessels. The columns are in general two or three cells broad, but they often spread out into irregular masses. The cells are uniform in appearance throughout the tumor. They are indistinct in outline, polyhedral or cuboid in form, with a large vesicular nucleus and a moderate amount of finely granular cytoplasm, which stains faintly with eosin. The nucleus is usually centrally situated, and contains one or more prominent chromatin masses. In short, the cells correspond in appearance and arrangement to those of the islands of Langerhans. No mitotic figures are found. The connective tissue framework is rather heavy. The blood vessels are dilated, frequently forming large spaces. They are intimately related to the cell columns, the latter resting directly on the capillary walls. The capsule is composed of coarse fibrillated connective tissue. Groups of tumor cells are included in it at several points, but do not penetrate it.

Islands of Langerhans are abundant in the pancreatic tissue surrounding the tumor. Some of them are unusually large, but otherwise they show nothing noteworthy. The pancreas contains a slight excess of connective tissue. The *acini* are small, the gland cells are shrunken, stain deeply and show no signs of secretion. The entire pancreas was cut in cross section at intervals of about 5 mm. (¼ in.), but no other tumor nodules were seen. Sections from various parts of the gland show numerous enlarged islands, some three or four times the usual size.

The second adenoma, which was found in the pancreas of a man, aged 46, dying of cerebral hemorrhage, arteriosclerosis and chronic nephritis, closely resembled the first.

Examination of Second Tumor.—It forms an encapsulated nodule 3 mm. (⅛ in.) in diameter. It is, however, more cellular than the first tumor, and the cells show greater variation in size and appearance. Some are three or four times as large as others; still others have a coarsely reticulated cytoplasm which scarcely stains.

The relation of adenomata of the islands of Langerhans to malignant tumors of the pancreas is unknown; but it seems doubtful whether they have any importance



Adenoma of the islands of Langerhans. The tumor here shown is 3 mm. (about ¼ inch) in diameter and situated in the midst of pancreatic tissue. The tumor cells are indistinct in outline, polyhedral or cuboid in form and each contains a large vesicular nucleus and finely granular cytoplasm. The capsule is composed of coarse fibrillated connective tissue.

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[1] Jour. Med. Research, May, 1902, iii, 383.
[2] Johns Hopkins Hosp. Bull., 1907, xviii

in this direction. Fabozzi[3] has reported five cases of carcinoma, however, which he considered arose from the islands of Langerhans. His work has not been confirmed, and indeed others (Reitmann,[4] Sauerbeck[5] and Grimani[6]) dissent strongly from his views. Speaking against this theory is the fact that, in carcinoma of the pancreas the islands, if not entirely destroyed, have in most of the cases reported shown no essential change. They seem to be more resistant to the invasion of the tumor than are the pancreatic acini, and may persist as isolated structures in the new growth after the glandular tissue has vanished. Sauerbeck describes carcinomatous masses inside the islands in one case, metastases from a cancer of the breast. This, he thinks, is the first report of the involvement of the islands in a carcinomatous process, either primary or secondary.

For permission to use the photomicrograph of the second tumor I am indebted to Dr. F. B. Mallory.

PELLAGRA.

REPORT OF CASE, WITH REMARKS ON ETIOLOGY.

N. M. MOORE, M.D.
Professor of Materia Medica and Therapeutics, Medical Department
of the University of Georgia.
AUGUSTA, GA.

Pellagra was first described by Gasper Casal in 1750, under the name of *"mal de la rosa,"* and since then has been found to be prevalent in many countries. It is said that there were fully 100,000 cases in Italy in 1905, and at least 3,000 of these were in the lunatic asylums.

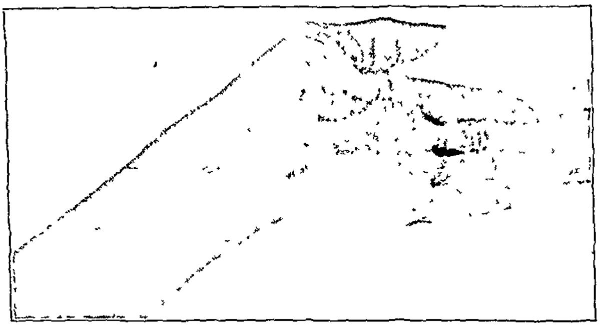

Fig. 1.—Hand of pellagrous patient from photograph taken after decided improvement had occurred in skin lesions.

Many cases have been reported from the various tropical and subtropical countries, but none from the United States until 1907; although in 1902, Dr. H. F. Harris reported to the Georgia Medical Association a case of ankylostomiasis with pellagrous symptoms and called attention to the possibility of this disease being present in Georgia.

In July, 1907, Dr. George H. Searcy[1] reported an epidemic of acute pellagra at the Mount Vernon Hospital for the (colored) Insane in Alabama. Dr. J. W. Babcock[2] of the State Hospital for the Insane at Columbia, S. C., made in December, 1907, a written report to the board of trustees of that hospital, calling attention to the presence of pellagra in South Carolina, and urging further investigations. Since Dr. Searcy's article,[1] a case has been reported by Dr. T. C. Merrill,[3] from Texas.

REPORT OF CASE.

Patient.—A woman, aged 37, born in Columbia County, Ga., was admitted May 19, 1908, to the Lamar Hospital for Negroes, at Augusta, Ga. It was impossible to get any history further than that the patient had worked on a farm, and moved into the city about March 1. No peculiarities were noted by her acquaintances at that time in regard to her mental condition, but the skin lesions were then present, and she said that they began to appear during February. Previous to their appearance, she complained of weakness and pain, especially in her hands and feet. About two weeks before she entered the hospital, it was noticed that she would act peculiarly at times, often having fainting spells and falling to the floor. May 19, she started to walk to the hospital, but fell on the street, and was brought in an ambulance. When seen by me the next day, she was in a semistupor, and would not answer questions. The buccal cavity was filled with foul-smelling fluid, which she made no effort to expectorate.

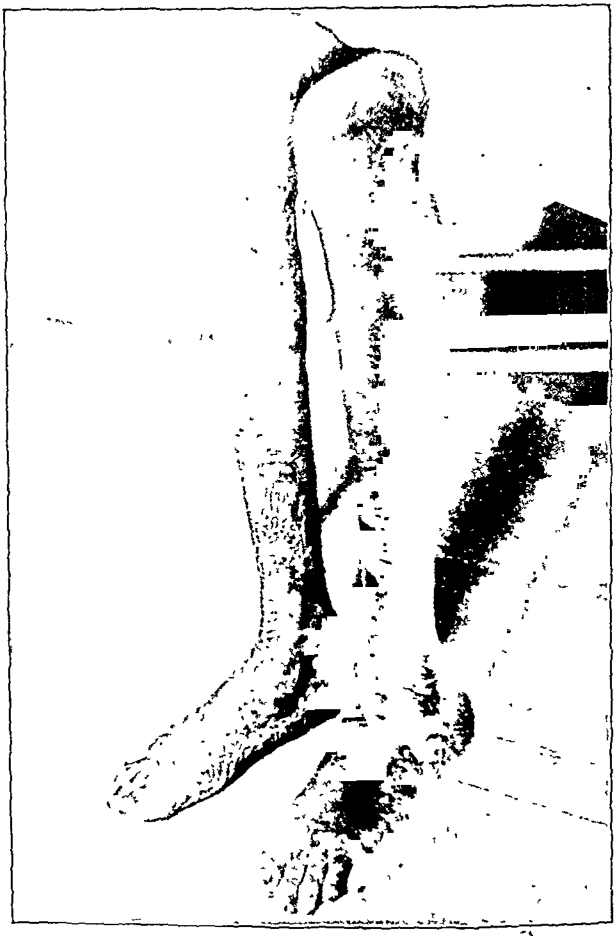

Fig. 2.—Legs and feet of pellagrous patient, from photograph taken after decided improvement had occurred in skin lesions.

May 23: She was delirious, screaming loudly and talking religion. At times, since then, her mind seemed clearer, and she would answer questions; but most of the time she took no interest in her surroundings. Marked salivation, noted when she first entered hospital, gradually subsided.

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[3] Beitr. z. Path. Anat. u. allg. Path., 1903, xxxiv.

[4] Ztschr. f. Heilk., 1905, xxvi (vi, new series), 1.

[5] Virchows Arch. f. path. Anat, September, 1904, supplement, clxxvii.

[6] Policlinico, Rome, 1906, xiii, 460.

[1] An Epidemic of Acute Pellagra, The Journal A. M. A., July 6, 1907, xlix, 37.

[2] What are Pellagra and Pellagrous Insanity? Does Such a Disease Exist in South Carolina, and What are Its Causes? Preliminary Report from S. C. State Hospital for the Insane.

[3] A Sporadic Case Diagnosed as Pellagra, The Journal A. M. A., Sept. 14, 1907, xlix, 940.

Physical Examination.—The pupils were normal. There were no ulcers in the mouth at time of admittance, but a small superficial ulcer of tongue was noted at one time during her stay in the hospital. A narrow pigmented line was noted on each side of the tongue near the margin and extending toward the tip. Similar pigmented areas were noted on the inner sides of cheeks. There were five badly decayed teeth. Lymphatic glands were generally palpable. Small, brown, pigmented spots were seen on various parts of the body and on the soles of the feet, probably luetic in origin. Examination of lungs, heart, and abdominal organs was negative. Nothing abnormal was noted on either arm, but on each elbow the epidermis was dry and darkly pigmented. Beginning at the middle third of each forearm, the skin was dry, very much thickened, especially over the hands, and black, looking very much as if the hands had been dipped into soot. The diseased skin was wrinkled and fissured in various places over the hands. The palms and fingers were involved as well as the backs of the hands. The nails were not involved. The thighs were normal in appearance, but the epidermis was somewhat thickened, wrinkled, and decidedly discolored over each patella, and the inner side of each knee. Extending from the lower third of the leg over the dorsum of each foot, and over the toes, the skin looked mummified—was black, scaly, dry, hard, and very much thickened. The skin was cracked in various places, and over the middle toe of the left foot had sloughed, leaving granulating tissue exposed. The toe nails were normal There were small, brown, pigmented spots on the soles of the feet; otherwise the skin was normal. The external genitals showed no ulcerations. The patient gave no evidence of pain when stuck with a pin over the affected areas of skin and over parts of the arm, but flinched when the body was touched Knee-jerks were absent. The bowels were very constipated The stools were neutral in reaction, and contained no eggs

Urine: The patient passed urine in bed, unless vessel was given her at regular intervals. Examination of catheter specimen, May 23, showed: Reaction, acid; sp. gr., 1012, no albumin; no sugar; no cellular elements. Examination of 24 hour specimen of urine, June 16, showed: Amount, 1450 c.c., reaction, acid; albumin, none; sugar, none; indoxyl, slightly increased; no casts; no blood.

Blood: Four blood examinations made by Dr. M. S. Levy, at different times during the patient's stay in the hospital, showed hemoglobin varying from 80 per cent. to 86 per cent., leucocytes from 9,400 to 10,600; red cells from 4,500,000 to 4,610,000 The differential counts showed a variation in the small lymphocytes from 20.5 per cent. to 24 per cent.; large lymphocytes from 4 per cent. to 5 per cent.; polynuclears from 65.5 per cent. to 68 per cent.; eosinophiles from 4 per cent to 5.5 per cent.; transitionals from 1 per cent. to 2.5 per cent No plasmodia or other abnormalities were noted. Examination of smears and cultures from cerebrospinal fluid gave negative results.

Course of Disease.—The patient began to show signs of improvement soon after her admittance to the hospital, and by June 16, her mental condition was much better, although still sluggish. She was then able to be up, but would occasionally fall on attempting to walk across the ward; the diseased skin of the arms and hands had peeled (Fig. 1), leaving fairly normal tissue beneath, and the skin lesions on her legs and feet (Fig. 2) showed signs of improvement.

This case is of interest, because of the very marked presence of the three cardinal symptoms of the disease, salivation, mental disturbance, and peculiar skin lesions. The fact that the skin lesions did not appear on the face, but on the knees, is of interest in showing that exposure of the part to the sun does not always determine the location of the lesion.

PREVALENCE OF THIS DISEASE IN SOUTHERN STATES.

From correspondence with physicians in charge of different insane asylums in the south. I believe that pellagra is much more prevalent in this section of the country, especially among the negroes, than we have any idea of at the present time.

Louis W. Sambon,[4] in 1905, called attention to the peculiar fact that no cases had been reported from the United States, but said: "I believe it is far more common in tropical and subtropical regions than we are aware of at present."

ETIOLOGY.

It is by no means proved that damaged maize alone is capable of producing this disease, although this is the theory held by many authorities, especially the Italian investigators. So good an authority on tropical medicine as Sambon, and many of the Spanish investigators oppose this view, and give much evidence against it. Sambon says:

> If I were to suggest a new theory of pellagra, merely as a working hypothesis, I should feel inclined to draw attention to the many analogies between pellagra and some of the protozoal diseases which have been recently worked out.

So far, only a few complete reports have been made of examinations of the blood and cerebro-spinal fluid, and as yet, no light has been thrown on the subject by work along this line. However, Sambon's suggestion offers a most inviting field for further investigations.[5]

NASAL MENSTRUATION.

F. E. WALKER, M.D.
Surgeon to Our Lady of Lourdes Hospital.
HOT SPRINGS, S. D.

Patient.—Mrs. H., aged 55, German.

History.—She has always been well and has borne five children. Menstruation commenced at age of 13, and has always been regular, though with some pelvic pain and distress two or three days prior to flow. She entered the climacteric at age of 49. There were no unusual pelvic symptoms. However, as the regular monthly uterine menstruation diminished there was "nasal menstruation," lasting from two to four days, preceded by more or less severe headache. This condition lasted about two years when normal menstruation ceased and "nasal menstruation" became permanently established.

Examination.—I first saw the patient in December, 1907, almost two years after the last normal menstrual epoch. She consulted me on account of an enlargement in the angle of the right jaw in the region of the parotid gland. She stated that on the cessation of the menses the gland would become painful, and enlarged each month, while at the same time she experienced more or less headache. All these symptoms disappeared as soon as the nose bleed commenced. After a few months she noticed that the gland remained enlarged: it had gradually increased in size so that at this date it was as large as an apple. During the period of nasal hemorrhage the gland would "swell up" and after the flow disappeared would "go down."

Operation.—April 14. The entire gland was removed and the patient rapidly convalesced. On the third day following the operation the nose bled more or less freely though not exceeding 64 gms. *in toto.* The symptoms were identical with those of menstruation following oophorectomy.

Subsequent History.—The patient has had no more headache and no nasal hemorrhage and is in the best possible condition.

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[4] Remarks on the Geographical Distribution and Etiology of Pellagra, Brit Med Jour., 1905, ii, 1272-1275

[5] In addition to references already given the following may be consulted.

Pellagra Occurring in England, Practitioner, London, 1906, lxxvi, 679-685

Examen du sang et du liquide céphalo-rachidien dans la pellagre, Compt rend Soc de biol, Paris, 1907, lxiii, 218

Le traitement de la pellagre par l'atoxyl, Bull. Acad de Méd, Paris, 1907, lviii 139-142.

New and Nonofficial Remedies

THE MEETING OF THE COUNCIL ON PHARMACY AND CHEMISTRY.

ADOPTION OF REVISED RULES GOVERNING NEW AND NONOFFICIAL REMEDIES.

A meeting of the Council on Pharmacy and Chemistry of the American Medical Association was held at the Association building, Chicago, July 17 and 18, 1908. The following members were present:

J. A. Capps, A.M., M.D., Assistant Professor of Medicine, Rush Medical College, University of Chicago.

David L. Edsall, A.B., M.D., Professor of Therapeutics and Pharmacology, Department of Medicine, University of Pennsylvania, Philadelphia.

Otto Folin, S.B., Ph.D., Professor of Biologic Chemistry, Harvard Medical School, Boston.

C. S. N. Hallberg, Ph.G., M.D., Professor of Pharmacy, University of Illinois School of Pharmacy, Chicago.

R. A. Hatcher, Ph.G., M.D., Professor of Pharmacology, Cornell University Medical College, New York City.

Reid Hunt, M.D., Chief of the Division of Pharmacology, U. S. Public Health and Marine-Hospital Service, Washington, D. C.

L. F. Kebler, M.D., M.S., Ph.C., Chief of the Drug Laboratory, Department of Agriculture, Washington, D. C.

J. H. Long, M.S., Sc.D., Professor of Chemistry, Northwestern University Medical School, Chicago.

F. G. Novy, M.D., Sc.D., Professor of Bacteriology, University of Michigan, Ann Arbor.

W. A. Puckner, Ph.G., Secretary of the Council and Chief of the Chemical Laboratory of the American Medical Association, Chicago.

G. H. Simmons, M.D., LL.D., Chairman of the Council and Editor of THE JOURNAL of the American Medical Association, Chicago.

Torald Sollmann, M.D., Professor of Pharmacology and Materia Medica, Medical Department, Western Reserve University, Cleveland, O.

Julius Stieglitz, Ph.D., Professor of Chemistry, University of Chicago.

M. I. Wilbert, Ph.M., Apothecary, German Hospital, Philadelphia.

As its chief business the Council discussed the revision of the rules and the rearrangement of the matter contained in "New and Nonofficial Remedies." It was decided that the book "New and Nonofficial Remedies" shall contain descriptions of the proprietary articles accepted by the Council and of such simple non-proprietary and unofficial substances as are of sufficient importance. It was decided that proprietary mixtures shall not be included in the main body of the book unless they show some originality and present a marked advance over similar products, but when these conform to the rules they shall be included in the form of an appendix to the book. Articles which are official in the United States Pharmacopeia or in the National Formulary, and non-proprietary mixtures of official articles, are not eligible for inclusion in the book.

The rules were modified in minor particulars, the following modifications being of first importance:

Rule 5 was so amended as to require that the actual identity of the manufacturer of a product be furnished.

The Council voted to interpret Rule 8 so that after Jan. 1, 1909, pharmaceutical preparations and mixtures will be admitted only under a pharmaceutical title which shall indicate the most potent ingredients. Arbitrary coined names will not be recognized for pharmaceutical mixtures.

It was decided that no pharmaceutical mixture shall be accepted whose name indicates its therapeutic action or is suggestive of the names of diseases or pathologic conditions in which it is to be used. After Jan. 1, 1909, this rule is to be extended to simple articles.

The Council voted to condense Rules 9 and 10 to become Rule 9.

A rule—Rule 10—was adopted under which recognition will be refused to articles which, because of their unscientific composition, are useless or inimical to the best interests of the public or of the medical profession.

The rules as modified are as follows:

OFFICIAL RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY.

INTRODUCTION.

The following rules have been adopted by the Council with the object of protecting the medical profession and the public against fraud, undesirable secrecy and objectionable advertising in connection with proprietary medicinal articles. Those physicians who wish to profit by this protection can do so by confining themselves in their prescribing to the articles which are contained in the current issue of the United States Pharmacopeia ("U. S. P."), of the National Formulary ("N. F.") or of "New and Nonofficial Remedies" ("N. N. R.").

The "N. N. R." contains a description of such proprietary articles as have not been found to conflict with the rules of the Council; and, of such simple non-proprietary and unofficial substances as seem of sufficient importance.

Proprietary pharmaceutical mixtures should comply with the rules and will be investigated by the Council. The Council, however, endorses the principle that prescriptions should be written on the basis of the therapeutic effects of the individual ingredients. For this reason, it does not include mixtures in this book unless they present some real advantage. If, however, the physician wishes to prescribe ready-made proprietary mixtures, he will find in the appendix, listed under the name of the manufacturer, those proprietary mixtures which on examination have not been found to conflict with the rules.

Non-proprietary mixtures share the status of the substances from which they are prepared, and therefore are not contained in the book.

RULES GOVERNING THE ADMISSION OF PROPRIETARY ARTICLES TO THE BOOK "N. N. R."

(The term "proprietary article" in this place shall mean any chemical, drug or similar preparation used in the treatment of disease, if such article is protected against free competition, as to name, product, composition or process of manufacture; by secrecy, patent, copyright, or in any other manner.)

Rule 1 (Ingredients).—No article shall be admitted unless its active medicinal ingredients and the amounts of such ingredients in a given quantity of the article be furnished for publication. The general composition of the vehicle, its alcoholic percentage, and the identity of any preservatives, must be furnished.

Rule 2 (Identity).—No chemical compound will be admitted unless sufficient information be furnished regarding tests for identity, purity and strength, the rational formula or the structural formula, if known.

Rule 3 (Direct Advertising).—No article that is advertised to the public will be admitted; but this rule will not apply to disinfectants, advertised for uses other than on the human body, or to non-medicinal food preparations, except when advertised in an objectionable manner.

Rule 4 (Indirect Advertising).—No article will be admitted whose label, package or circular accompanying the package contains the names of diseases, in the treatment of which the article is said to be indicated. The therapeutic indications, properties and doses may be stated. (This rule does not apply to circulars, etc., when distributed solely to physicians, to advertising in medical journals, or to vaccines and antitoxins.)

Rule 5 (Fraudulent Claims as to Origin).—No article will be admitted or retained concerning which the manufacturer, or his agents, make false or misleading statements as to source, raw material from which made, or method of collection or preparation. The identity of the actual manufacturer of the article must be furnished.

Rule 6 (Fraudulent Claims as to Therapeutic Value).—No article will be admitted or retained concerning which the manufacturer or his agents make unwarranted, exaggerated or misleading statements as to the therapeutic value.

Rule 7 (Poisonous Substances).—The principal label on an article containing "poisonous" or "potent" substances must state plainly the amount of each of such ingredients in a given quantity of the product.

Rule 8 (Objectionable Names).—If the trade name of an article is not sufficiently descriptive of its chemical composition or pharmaceutical character, or is, for any other reason, unsatisfactory or objectionable, the Council reserves the right to include with the trade name a descriptive title in the book. Articles bearing objectionably suggestive names will be refused consideration.

[a. The Council has voted so to apply this rule that after Jan. 1, 1909, pharmaceutical preparations and mixtures will be admitted to the "N. N. R." or appendix only under pharmaceutical title which shall indicate the most potent ingredients. Arbitrary coined names will not be recognized for pharmaceutical preparations or mixtures, but they may be admitted for new chemicals or active principles.

b. The Council has voted that no pharmaceutical mixture will be admitted whose name indicates its therapeutic action, or is suggestive of the names of diseases or pathologic conditions in which it is to be used; after Jan. 1, 1909, this ruling is to be extended to simple articles, as well as mixtures.]

Rule 9 (Patented Products and Protected Names).—If the article is patented—either process or product, or both—the number of such patent or patents should be furnished to the Council. Furthermore, if the name of an article is registered, or the label copyrighted, the registration (trademark) number and a copy of the protected label should be furnished the Council. In case of registration in foreign countries the name under which the article is registered should be supplied.

Rule 10 (Unscientific and Useless Articles).—No article will be admitted which, because of its unscientific composition, is useless or inimical to the best interests of the public or of the medical profession.

EXPLANATORY COMMENTS ON THE RULES.

Introduction.—The Council on Pharmacy and Chemistry was established in February, 1905, by the American Medical Association primarily for the purpose of gathering and disseminating such information as would protect the medical profession in the prescribing of proprietary medicinal articles. In pursuance of this object the Council examines the articles on the market as to their compliance with definite rules which are designed to prevent fraud, undesirable secrecy and the abuses which arise from advertising to the laity. Such articles as appear to conform to the rules are admitted and their essential features are described in the annual publication of the Council, the "N. N. R.," if they come within the scope of this book. This description is based in part on investigations made by or under the direction of the Council, but in part also on evidence or information supplied by the manufacturer or his agents. Such interested statements are examined critically, and are admitted only if they appear to be in conformity with the evidence. It is, however, manifestly impossible for the Council to investigate the composition of every complex pharmaceutical mixture, or thoroughly to check every therapeutic claim; it can only give an unbiased judgment on the submitted evidence. Criticisms and corrections of the descriptions which may aid in the revision of the matter will be appreciated. The Council judges an article entirely by the facts existing at the time of its admission. Previous infringements of the rules (short of *intentional* fraud) do not prevent the favorable consideration of an article, provided that they have been thoroughly corrected. Infringements after admission, or the discovery that the Council's information was incorrect, will cause the acceptance to be reconsidered. The Council desires physicians to understand that the admission of an article does not imply a recommendation. It means only that no conflict with the rules has been found by the Council.

The Scope of the "N. N. R." and Appendix.—To aid physicians and manufacturers in deciding what articles come within the scope of this book, or, in other words, to enable physicians to recognize whether an article has been omitted because it does not need admission or because it has been rejected, the Council furnishes the following more detailed definitions:

Official Articles.—The status of the articles which are official in the United States Pharmacopeia or in the National Formulary naturally does not require the approval of the Council. Since authoritative information concerning them is readily obtainable, they have no place in the "N. N. R." To avoid confusion with non-official substances marketed under similar names the Council recommends that they be prescribed by their official Latinized title followed by the abbreviation "U. S. P." or "N. F.," thus: Tincturæ Nucis Vomicæ U. S. P. 5 c.c., Elixir Gentianæ N. F. 95 c.c.

"Trade names," protected or otherwise, for these articles will not be recognized by the Council unless they antedate the recognition of the article in the United States Pharmacopeia or National Formulary. Nor will non-essential modifications of official or non-proprietary preparations be recognized. Essential and important modifications, however, will be accepted and will receive individual mention in the "N. N. R."

Substances Described in the "N. N. R."—In the body of the book will be described simple proprietary substances and their preparations when these are marketed by the original manufacturer; proprietary mixtures if they have originality or other important qualities which entitle them to such place; and important non-proprietary unofficial articles. The Council recommends that when these latter are prescribed, that they be indicated by the abbreviation "N. N. R.," thus insuring to the prescriber the quality of these articles laid down in the book.

Proprietary Mixtures.—A mixture will be considered as proprietary, and therefore requiring consideration by the Council and admission to the book or appendix, if it contains any proprietary article; if it is marketed under a name which is in any way protected; or if its manufacturer claims for it any unusual therapeutic qualities. All proprietary mixtures which are marketed in conformity with the rules are listed in the appendix of the "N. N. R." under the names of their manufacturers. They are not admitted to the body of the book, save in the exceptional cases cited in the preceding paragraph.

Non-Proprietary Mixtures of Official Substances.—Since the ingredients of such mixtures do not require the approval of the Council, and since the mixtures are not open to the proprietary abuses which called for the work of the Council, it is not necessary that they should be investigated and approved by the Council. The physician should judge whether such mixtures should be directed to be prepared by the pharmacist, or whether he is justified in ordering a ready-made preparation. If he decides to use a ready-made non-proprietary preparation he must judge for himself if it is marketed in accordance with the rules. (It should also be remembered that the application of trade names to any substance makes it proprietary.)

Objectionable trade names for official substances.—The application of "trade names" to official or established non-proprietary products tends to confusion and fosters many abuses. It can only be condoned if the "trade name" possesses priority as previously defined. Such trade names will therefore not be admitted by the Council except in those few cases in which the trade name has already come into extensive use. The protection of the manufacturers can be amply secured by appending the firm or "brand" name to the official name, and to this there can be no objection. Appended names or initials of manufacturers as in Mistura Rhei et Sodæ, N. Y. & Co.; Mixture of Rhubarb and Soda, "Jones;" Pills of Aloes and Iron, "Smith brand," are considered non-proprietary. Protected generic brand names shall not be regarded as proprietary. However, the preparation "Adrenalin suppositories" is proprietary because the name adrenalin itself is protected.

Unessential Modifications of Official Substances.—The subterfuge for obtaining proprietary rights over an official or established non-proprietary product, by introducing unessential modifications, also tends to confusion and abuses, and such articles will not be admitted by the Council. Essential and important modifications, however, will receive recognition. (The Council interprets the term "established non-proprietary product" to apply to a preparation of any formula which has been published through any recognized or reasonably accessible channel of publication, prior to its appropriation or modification by a manufacturer.)

EXPLANATORY COMMENTS ON THE RULES GOVERNING THE ADMISSION OF PROPRIETARY ARTICLES.

Rule 1 (Ingredients).—It is not only the right but the duty of the physician to know the essential composition of what he prescribes; the Council can not compromise on this proposition. Not only the potent ingredient, but also the general character of the vehicle, the presence of alcohol, and the identity of preservatives, or of any other substance, whether added or present as an impurity, must be stated, if these can under any circumstances affect the action of the article. This generally does not mean the publication of such trade secrets as flavors or the details of the working formula. Furthermore, trade secrets will not be received as confidential by the Council, since it accepts information only with the distinct understanding that this may be freely published, at its discretion. Nor does the Council accept invitations to inspect factories; its concern is with the finished products.

On the other hand, the Council requires that the information be complete and accurate as to the medicinal ingredients. Unofficial constituents of proprietary mixtures must be submitted by the manufacturer in the regular way and must be approved by the Council before the preparations containing them can be admitted.

When it appears that a manufacturer has made a *deliberately* false statement concerning his product he is asked to furnish an explanation; and if this is not satisfactory the product will not be admitted, even if the false statement is subsequently corrected or omitted. This applies not only to statements made to the Council, but also to statements furnished to physicians by the manufacturer or his agents, even when these statements are in the guise of testimonials.

Rule 2 (Identity).—In order to avoid errors in the case of chemical compounds and to guard against adulterations, lack of potency or strength and the mistaking of one chemical for another, it is necessary to have at hand suitable tests. If these facts have appeared in the literature, or in standard text-books, reference to them will be sufficient; but with new chemicals, especially synthetics, the manufacturer or his representatives will be required to supply such tests for publication, together with the rational formula, or structural formula, if known, in order that an intelligent opinion of these products may be assured.

Rule 3 (Direct Advertising).—The impossibility of controlling the irresponsible claims which are usually made in advertisements to the public, the well-known dangers of suggesting by descriptions of symptoms to the minds of the people that they are suffering from the many diseases described, the dangers of an unconscious and innocent formation of a drug habit, and the evils of harmful self-medication, including the dangers of the spread of many infectious and contagious diseases when hidden from the physician, and similar well-known considerations, are the reasons for discouraging, in the interest, and for the safety, of the public, this reprehensible form of exploitation.

In the case of subjects on which the public should be instructed, as the use of disinfectants and foods, such advertisements, if not in objectionable forms, are considered admissible.

We may divide the foods into three groups. The first group contains the ordinary foods, including the well-known breakfast foods. These do not come under the supervision of the Council in any way. The second group includes medicinal foods proper, such as predigested foods, which have a relatively low food value and which are characterized by a high alcohol or preservative content, and which frequently contain strictly medicinal substances, or food substances for which distinct therapeutic properties are claimed. These products should be used only on the advice of the physician, and the advertisements should be restricted as in the case of ordinary medicines. The third group includes a large and important class of manufactured products, such as invalid and infant foods, which in a sense stand between the first and second groups. The public has the same interest in these foods that the physician has, and usually has full information concerning them. While the primary recommendation of these articles should naturally come from the physician, it can not be expected that their continued use should depend on repeated prescriptions. Information concerning this group of foods would come naturally and properly from a physician, and the collection and dissemination of this information may very properly be included in the work of this Council. As the use of products in this class is an extended one, it is not proper to limit their advertising to medical journals, but the advertising should be permitted in the lay press so long as it is conducted in a manner compatible with the rules of the Council.

Rule 4 (Indirect Advertising).—It should be remembered that the sole intent of this rule is to protect the physician, so that in prescribing a proprietary medicine he need not unconsciously become an advertising agent of proprietors. The rule imposes no restriction on the legitimate methods of bringing a remedy to the attention of the profession, such as advertising in medical journals, circulars and other printed matter distributed solely to physicians. The rule applies only to the package as it may reach the patient. The naming of diseases on the label or package is not necessary, as is shown by the very large number of proprietary products which have been successfully introduced without resorting to this expedient. This method of popularizing a proprietary remedy with the laity is most objectionable, and should not be tolerated in any form. The Council considers therapeutically suggestive names (see Rule 8, b) as an unworthy expedient to the same end. It would prefer to have therapeutic indications omitted from the label and package, but does not insist on this point, because these are useful in some exceptional cases. It will be considered an infringement of the rule when an article is marketed in bottles which have the name of the article blown into the glass, or if otherwise the name or initials or other distinctive mark of the article are permanently stamped on the container, on the article itself, or are contained on the stoppers or seals. Articles which are marketed in any of these ways are not admitted. Readily removable labels are not objectionable. The Council does not countenance the use of an admitted article for advertising other articles which have not been admitted by the Council.

Rule 5 (Fraudulent Claims as to Origin).—No false or misleading statement in regard to an article can be permitted concerning the source or material from which it is made, or the persons by whom it is made. Some glaring frauds of this nature have been perpetrated in the past, and this rule is intended to prevent such imposition. The identity of the actual manufacturer of an article should be known, since the manufacturer is in part responsible for the quality of the product. No good reason can exist for concealing the identity of the manufacturer of a legitimate article: such concealment must be considered evidence of the doubtful character of a product or its method of exploitation.

Rule 6 (Fraudulent Claims as to Therapeutic Value).—This rule is intended to restrict the direct and indirect claims of the manufacturers or agents as to the therapeutic superiority of their products, to what is compatible with ascertained facts. The Council aims to be quite liberal in the application of this rule. There are honest differences of opinion as to many therapeutic questions. It is natural that a manufacturer should be rather partial toward his own product, and, since every one should be cautious in accepting such biased claims, a moderate degree of emphasis may not be objectionable. The Council, therefore, does not assume to censor any reasonable statements, especially when such statements are confirmed by responsible clinicians. Claims are often made, however, which are incompatible with common experience and which sometimes defy the laws of Nature. Claims which seem highly improbable will not be admitted by the Council unless the manufacturer supports them by evidence acceptable to the Council. In doubtful cases the Council acts on these questions under the advice, and with the cooperation of its staff of clinical consultants.

Rule 7 (Poisonous Substances).—For the information of the pharmacist or dispenser, and to enable him to safeguard the interests of the patient and the physician, all articles containing such potent agents as the poisonous alkaloids and other organic substances and the salts of some of the metals, should have the exact amount of these ingredients which is contained in the average adult dose stated on the label.

Rule 8 (Objectionable Names).—Many of the abuses connected with proprietary medicines are intimately associated with the more or less arbitrarily selected or "coined," usually protected, names. In the interest of those physicians who would prefer to employ a more rational nomenclature the Council advises the use of scientific names by the manufacturers, at least as synonyms. In view of the existing trade conditions, however, it does not insist on this except in such specific cases as explained below in which experience has shown the necessity of restrictions. These restrictions will be applied to all articles admitted after Jan. 1, 1909.

Pharmaceutical Preparations and Mixtures. — Since these, with rare exceptions, are not original in composition, there is no sufficient reason why they should be endowed with arbitrary names; on the contrary, it is important that the prescribing physician should be constantly reminded of the potent ingredients on which the actions of such preparations are based. It is particularly important that actively poisonous or habit-forming drugs be not disguised under an innocently worded title.

The Council recognizes, on the other hand, the right of discoverers of new synthetic products or active principles to name their discovery, and interposes no objection to arbitrary names for such products, so long as such names do not tend to advertise the product to the laity, as specified under Rule 8, b. It is desirable, however, that the coined names should indicate the chemical composition of the article. With synthetic chemicals the true chemical name should be stated, at least in addition to the trade name. If an article conflicts only with Rule 8 it may be admitted as soon as the manufacturer substitutes a name which the Council considers satisfactory.

Rule 9 (Patents, Trademarks, Copyrights, Etc.).—This information is desirable in determining the legal status of these articles and will permit their ready recognition in current publications.

Rule 10 (Unscientific and Useless Articles).—The Council has been justly criticized because its rules failed to exclude certain unscientific mixtures, whether of well-known or obscure substances. The use of articles which are unessential modifications of official or established non-proprietary articles is unscientific and serves no useful purpose. The Council, therefore, will not admit products which are scientifically unsound and which, therefore, must be considered useless or inimical to the best interest of the medical profession and the public. This class includes mixtures containing an excessive number of ingredients: those which contain substances of no probable therapeutic assistance to each other; those of no therapeutic value.

Sciatica from Lemonade.—F. Koren, of Christiania, writes to the *Tidsskrift for den norske Lægeforening*, August 15, asking whether others know of experiences similar to his with sciatica after taking lemonade. On three occasions he had a very severe, acute attack of sciatica, compelling him to remain in bed for a day, after drinking a glass of lemonade. His wife's aunt, in England, also suffers severe lumbago for several days every time she drinks lemonade, as he learned later. He experienced the intense sciatic pain almost at once after drinking his "lemon squash." Under salicylates and local heat the neuralgia vanished by the second day.

Therapeutics

HYPNOTICS.

It is impossible to enumerate the hypnotics in the order of their importance, as the importance of each individual drug varies with the condition to be combated; consequently the following are arranged alphabetically. The official hypnotic drugs are:

Bromids.
Chloral.
Chloralamid.
Hyoscin.
Morphin.
Paraldehyd.
Sulphonethylmethanum (trional).
Sulphonmethanum (sulphonal).

BROMIDS.

The bromids are used to produce sleep and to quiet the nervous system in conditions of irritability and excitation. Their action is largely as a sedative to the spinal cord, and also as a sedative to the cerebral cells. They are depressant to the circulation and, therefore, quiet circulatory excitement. Under their action the heart is slowed and the blood pressure falls; consequently in any condition of serious heart or circulatory weakness bromids are contraindicated. On the other hand, in any condition of inflammatory irritations of the cerebrospinal system they are indicated.

Their prolonged use tends to cerebral degeneration; consequently in old age and in mental debility or melancholia, or with symptoms of paresis bromids should not be used. Their prolonged use also tends to produce muscular weakness as well as weakened circulation, sluggish digestion, loss of appetite, and, generally, imperfect nutrition. Mental actions become sluggish, the eyes lose their luster, the face becomes pale, and actual anemia may develop. The perspiration is increased and may be irritating and sour. The whole condition is that of great depression. Such a chronic condition caused by the administration of bromids has been termed "bromism," but the term should be confined to the condition of chronic poisoning.

As the bromids are partially excreted through the skin, they often, directly or indirectly, irritate it, and acne or various papular or even wartlike eruptions can occur. The more carefully the body is cleansed with baths during prolonged administration of bromids the less likely is the skin to show eruption.

The over-action of a single dose of a bromid is shown by acute depression (lowered temperature, weak pulse, cold, clammy perspiration), impaired speech, tremor, profound sleep, perhaps stupor and, possibly, paralysis due to spinal depression.

The treatment of such a condition would be the application of dry heat, atropin and strychnin hypodermatically, black coffee by the mouth or rectum, and artificial respiration if it is needed.

Acute poisoning by bromids is rare, as a single dose to produce poisoning is rarely taken. The large doses often administered in epilepsy do not cause poisoning, as the patient has become tolerant to such dosage.

Bromids are indicated as follows:

1. To produce sleep.
2. In hysterical conditions without neurasthenia.
3. In acute cerebral excitement.
4. In inflammation of the meninges.
5. In convulsions caused by irritation of the brain or spinal cord (uremia, tetanus, hydrophobia).
6. In epilepsy.
7. As an antidote in strychnin or other convulsive poisoning.
8. To prevent cinchonism.

The only justification for administering bromids for a long period is in epilepsy, and in this disease it is a symptomatic treatment, though it seems at times to be curative. The size of the dose that should be used, the total amount and the length of time that the drug should be given must be decided by the symptoms of the disease and by the action of the bromids on the individual patient. However, by greatly diminishing the amount of sodium chlorid allowed in the food, it has been proved that therapeutic effects may be achieved from the bromids in epilepsy with much smaller doses than formerly were given.

As above stated, the eruptions on the skin caused by the continued use of bromids can be much abated or even abolished by the plentiful drinking of water and by daily hot baths. The coincident administration of arsenic is also often successful in preventing these eruptions.

There is no question that in hysterical conditions and conditions that simulate exophthalmic goiter (Graves' thyroid disease) bromids given for some time are of great value. They are also valuable in the nervousness and vasomotor disturbances of the menopause. The value of a bromid is probably not only in its actual sedative action on the nerve centers, but also by its quieting action on the thyroid gland, which in all of these conditions shows more or less hyperactivity. While in hysterical conditions bromids, even when administered for several weeks, may do nothing but good, it constantly must be borne in mind that their tendency is to cause debility and malnutrition that it may be difficult later to combat. The dose of a bromid to meet these indications is not large, from 0.50 gram (7½ grains) to 1 gram (15 grains), two or three times a day.

As a hypnotic, the dose should be at least 2 grams (30 grains), given from one to two hours before bedtime. More may be given if deemed advisable. A smaller dose is rarely of any utility. As a hypnotic, bromids should not be given for any great length of time. If a hypnotic must be given for a considerable time, some substitute must be used, so that a habit for bromids may not be acquired.

The bromids are valuable in preventing the unpleasant symptoms from large doses of quinin. The coincident administration of three grains of a bromid for every *one grain* of quinin, *i. e.*, 1 gram (15 grains) of a bromid to 0.30 gram (5 grains) of quinin, will prevent cinchonism. Of course it would be inadvisable to give sufficient bromid to counteract the effect of the enormous doses of quinin given in pernicious malaria, but in ordinary intermittent fever during the period of the administration of fair doses of quinin to patients very susceptible to it, bromids are satisfactory.

The drugs whose physiologic actions are more or less similar to bromids are those that are termed depressomotors. They are chloral, physostigma (calabar bean), gelsemium and conium. Chloral, however, is the drug that acts most similarly to the bromids and may be substituted for them both as a hypnotic and as a cerebrospinal depressant.

The official bromids are:

Ammonii bromidum.
Calcii bromidum.
Lithii bromidum.
Potassii bromidum.
Sodii bromidum.
Strontii bromidum.
Zinci bromidum.

There is no reason for using the lithium, calcium or zinc bromid.

Strontium bromid is supposed to have a little less deleterious effect on the digestion than the other bromids have. The difference is so slight, however, that there is no good reason for using it.

The ammonium bromid is more disagreeable than the potassium or sodium bromid, and therefore is not often used. The pleasantest to take is the sodium salt.

The sodium and potassium bromids are the ones most frequently used, and of these the potassium salt seems slightly more hypnotic, but if long given is more depressant to the circulation, as potassium is more of a heart muscle depressant than is sodium. Consequently, for prolonged use the sodium bromid is best, except, perhaps, a combination of potassium and sodium bromids. It is thought by some physicians that a combination of bromids in small doses acts better than an equivalent large dose of a single bromid.

Hydrobromic acid should never be used as a substitute for a bromid. While it causes bromid action, it is acid and therefore more irritant to the gastrointestinal tract. There is no good reason for using hydrobromic acid.

The following preparations are found in the National Formulary:

Elixir Ammonii Bromidi: Each teaspoonful represents 0.30 gram (5 grains) of ammonium bromid.

Elixir Calcii Bromidi: Each teaspoonful represents 0.30 gram (5 grains) of calcium bromid.

Elixir Lithii Bromidi: Each teaspoonful represents 0.30 gram (5 grains) of lithium bromid.

Elixir Potassii Bromidi: Each teaspoonful represents 0.60 gram (10 grains) of potassium bromid.

Elixir Sodii Bromidi: Each teaspoonful represents 0.60 gram (10 grains) of sodium bromid.

Liquor Magnesii Bromidi: Each teaspoonful represents 0.5 gram ($7\frac{1}{2}$ grains) of magnesium bromid with syrup aurantii.

Mistura Chlorali et Potassii Bromidi Composita: Each teaspoonful contains about 0.80 gram (12 grains) each of chloral hydrate and potassium bromid, and 0.008 gram ($\frac{1}{8}$ grain) each of the extracts of cannabis indica and hyoscyamus.

Pulvis Potassii Bromidi Effervescens: A heaping teaspoonful contains about 0.65 gram (10 grains) of potassium bromid.

Pulvis Potassii Bromidi Effervescens cum Caffeina: A heaping teaspoonful represents about 0.65 gram (10 grains) of potassium bromid and 0.065 gram (1 grain) of caffein.

Syrupus Bromidorum: Each teaspoonful contains 1 gram (15 grains) of the mixed bromids of potassium, sodium, ammonium, calcium and lithium in compound syrup of sarsaparilla.

The potassium and sodium bromids are best administered in plain water, though they may be given in effervescing water if preferred. Any syrup makes the salty taste of the sodium bromid or the flat taste of the potassium bromid more disagreeable.

Bromid tablets should never be swallowed whole, as these concentrated salts may seriously irritate the stomach and cause severe pain and even pseudo-angina pectoris, and may even cause an ulcer of the stomach. Hence, whenever bromids are taken they should be ordered thoroughly dissolved and well diluted.

R.	gm. or c.c.		
Sodii bromidi	20	or	ʒv
Aquæ	100		fl℥iv

Sig.: Two teaspoonfuls in water, two hours before bedtime.

ARSENIC.

It has long been known that while arsenic is often used in anemias it does not *per se* increase the hemoglobin or the output of red blood corpuscles, although it has many times caused clinical improvement in various blood diseases, notably in pernicious anemia. At times it seems to increase the number of white blood corpuscles, and at other times, in leukemia, has been shown to diminish them. The administration of arsenic has not seemed to increase the production of red blood corpuscles in normal animals.

While iron is the most satisfactory treatment in chlorosis, other drugs or salts are often as successful in the treatment of this condition, notably salines, bowel antiseptics, thyroid and arsenic. The disturbance in chlorosis seems to be due to a disturbed physiologic chemistry of the iron from the food to the red blood corpuscles, and other salts may sometimes correct this chemical error as well as an iron salt.

Arsenic has been supposed to act as a stimulant to the bone marrow, and hence perhaps in certain conditions increases the red blood corpuscle output. It also seems to be a stimulant to the thyroid, and that gland probably takes some part in blood formation.

Dr. James A. Gunn, Edinburgh, Scotland, in the *British Medical Journal,* July 18, 1908, presents his results from experimentation with this drug.

He suggests that in studying pernicious anemia and the etiology of this condition we look to a weakened condition of the stroma of the red corpuscles as a probable cause of their untimely destruction rather than to the organs that produce the red corpuscles or to the contents of the red corpuscles. The hemoglobin content of the red corpuscles in pernicious anemia seems to be perfect or even increased in amount. The stroma of the cells contains considerable lecithin and cholesterin, and if not enough of these substances are in the system the stroma can not be well formed.

Lecithin also seems to be a stimulant to the red bone marrow, and in various conditions of anemia the feeding of red bone marrow preparations or the administration of lecithin preparations has often improved the anemia.

Anything that could make the stroma of the red corpuscles less liable to destruction would probably improve the condition of pernicious anemia. Gunn finds by experiments that very dilute solutions, even 1 to 400.000 parts of arsenic (Arseni trioxidum) mixed with blood, will prevent the destruction of the red corpuscles when treated with distilled water. Distilled water causes destruction of the red cells when added to blood. If this blood was previously treated with arsenic solution, the destruction becomes less and less rapid, depending on the strength of the arsenic solution: the greater the strength, up to 1 to 50,000 dilution, the greater the ability of the stroma of the cells to withstand the destructive action of water. Gunn finds by estimation that it is possible with ordinary good-sized doses of arsenic to cause a solution of arsenic in the blood equal to 1 part to 400.000. He thinks that this is the reason of the prevention of red corpuscle destruction that is the cause sometimes of the improvement in pernicious anemia from the arsenic.

He also thinks, as arsenic in the blood has not been proved to act on malarial organisms, that its value in malarial fevers is due to preventing the parasites from entering the red corpuscles and destroying them.

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[*For other information see second page following reading matter*]

SATURDAY, SEPTEMBER, 26, 1908.

THE CAMPAIGN AGAINST TUBERCULOSIS IN SWEDEN.

An official communication to the International Congress on Tuberculosis in Washington this week, from the Antituberculosis Association of Sweden,[1] reviews the progress of the crusade against the disease in that country.[2] The movement may be traced back to 1896, when the Swedish Medical Society took the initiative and pointed out the necessity of establishing sanatoria in the country for the treatment of tuberculous patients. This object was at last secured through the generosity of King Oscar II, who devoted to it the jubilee fund amounting to about $583,000.

Another movement which has greatly promoted the antituberculosis campaign is the National Antituberculosis Association, which was founded in 1904 and now has a membership of about 22,000, a very respectable number when it is remembered that Sweden is a small country, its population numbering only about 5,300,000. All classes of the population are represented in this association and the fees are so small as to allow even the working classes to belong to it, a permanent membership costing $26.00 and annual dues being only 53 cents. The association receives income from membership fees, from gifts and from the sale of the so-called charity stamps, which are a profitable source of revenue. This association does not undertake to cure the sick or to treat consumptives, or in any way to usurp the functions of the municipality, but confines its efforts mainly to education. Three methods are chiefly employed: The first consists of lectures, for which the lecturers receive a moderate fee. These lectures are supported by the press and are well received by the people. They are practical and a distinct effort is made at each lecture to explain and recommend the methods and work of the association. During the years 1904 to 1907 883 lectures have been given, and these have been attended by about 147,600 persons. Secondly, in Stockholm a museum of tuberculosis has been established which serves the purpose of ocular demonstration in the results of the disease and the methods of fighting it. The third method is the free distribution of pamphlets to soldiers, students, societies, magazines and newspapers and their sale at a moderate price. The association publishes a quarterly journal for the information of those interested in the antituberculosis movement.

One of the difficulties against which the association has had to contend is the "consumption terror," an unreasonable fear of the disease and everything connected with it, which has been aroused by this propaganda, and to counteract this feeling a special pamphlet has been published. The cooperation of the press in this campaign has been secured to a gratifying extent. One commendable feature of the association's work is the attempt to provide for the training of physicians who may have to deal with this disease. For this purpose the directors of the public sanatoria of the jubilee fund have extended to physicians nominated by the Antituberculosis Association the privilege of two months' courses at some of the sanatoria.

The government has made a statistical investigation of the prevalence of the disease, which resulted in showing about 30,000 consumptives in the country, of whom about 10,000 die annually, giving a death rate about the same as that of other countries. The government then took the important step of furnishing free sites for the building of sanatoria from the public lands and advancing half the cost of building, with a maximum of about $265 a bed. In addition, provision was made for the appropriation of about 13 cents a day per patient toward the maintenance of these institutions. Reports of deaths from tuberculosis and disinfection of the premises at public expense are proposed, but it is not thought desirable to require reports of cases. It is also proposed to exclude tuberculous persons from the dairy business and to forbid their employment as wet-nurses or school teachers, and tuberculous children may be excluded from the schools. Poor-law authorities are to be required to see that children whom they board out do not run the risk of contracting tuberculosis.

Tuberculosis dispensaries are being established in the larger cities and serve a useful purpose in the instruction of patients and their relatives. A number of the methods pursued in Sweden are somewhat peculiar and receive an extended notice. It is natural in so small and poor a country that some of the methods found practicable in other countries can not be carried out.

Ragnar Friberger, from some experiments undertaken by him, reports that if the clothing and person of a consumptive are kept strictly clean there need be no fear of the clothing becoming a source of infection. But, on the other hand, the neglect of these rules is proved to result in the clothes becoming infected. Prof. Josef Svensson states, as the result of experiments to determine whether or not tuberculosis can be communicated by the inhalation of dust containing tubercle bacilli, that tuberculous matter is readily absorbed into the lungs in a dry condition and that direct infection of the lungs is the way in which tuberculosis most frequently makes its appearance in cattle. From an investigation of the frequency of tuberculosis in different parts of Stockholm, in 1906, as compared with density of population and economic position, J. E. Johansson and R. Moosberg draw the following conclusions: Consumption is most frequent in those parts of the town where the rents are lowest and the population densest. The amount of house rent per fireplace regularly decreases with the increase of frequency of consumption, and the percentage of "poor" among the cases observed rises with the same regularity. The number of inhabitants per 100 fireplaces increases with the frequency of consumption. An investigation tending to throw light on the relation of bovine to human tuberculosis was made in the parish of Lower-Lulea, a district comprising 2,293 inhabitants. Of these 1,498 were examined and tuberculosis either of the lungs or of glands was found in 701. On the other hand, bovine tuberculosis was found to be entirely absent from the district.

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[1] The Struggle Against Tuberculosis in Sweden: A Publication Dedicated to the International Tuberculosis Congress in Washington. Issued by the Swedish Government, Stockholm, 1908.

[2] For a previous review of the work, see The Journal, Dec. 7, 1907, p. 1930

An especially insanitary arrangement for sleeping is found in some parts of Sweden. While the houses are of good size they are not utilized to their full capacity. In the winter the inhabitants climb into beds attached to the wall which are closed by a door (so-called cupboard beds). Experiments are being made in the building of model tenements for working people and also in the attempt to provide for the healthy children of consumptive parents, so that they shall run as little risk as possible of contracting the disease.

The encouraging thing in this valuable communication to the congress is in the fact that *pari passu* with the advance of these prophylactic methods the tuberculosis mortality of Sweden is shown to be progressively diminishing. This demonstration of the effects of intelligent sanitation, limited as it necessarily is by the smallness and meager financial resources of the population, is a credit to the country and should stimulate other countries of greater scope and lesser limitations to renewed and at least equally successful endeavor.

HUMAN SERUM IN CEREBROSPINAL FEVER.

Much progress has been made during the last few years in our knowledge and treatment of epidemic cerebrospinal fever. The most conspicuous event in the recent history of this dreaded disease is the introduction, by Wassermann in Germany and by Flexner and Jobling in this country, of active therapeutic sera. It is not the present purpose to discuss the mode of action of these sera or the results obtained by their use, but rather to direct attention to recent studies into the reactions that occur in patients suffering from cerebrospinal fever and to certain practical deductions from the results. The results obtained by Davis[1] show that while the serum of normal human beings may contain meningococcocidal substances as well as opsonins for meningococci, both these specific properties are markedly increased in the course of meningitis. Houston and Rankin[2] found that from the sixth day onward all the patients examined showed a marked increase in their opsonic index for meningococci, and McKenzie and Martin[3] noted that while the serum of normal human blood in many cases contains meningococcocidal substances these substances are certainly increased in the blood of patients with acute or chronic meningococcal meningitis.

Davis as well as McKenzie and Martin found that normally the cerebrospinal fluid is totally devoid of meningococcocidal properties, and this observation, coupled with the knowledge of the antimeningococcal power of the blood, naturally suggested intraspinal injections of human serum in patients suffering from epidemic meningitis. Davis used normal fresh human serum in two cases, eight and ten cubic centimeters being injected after first withdrawing a larger quantity of cerebrospinal fluid. One patient recovered and the other died, and the only deduction permissible would seem to be that the serum in no way did harm. McKenzie and Martin used serum from patients who had recovered from cerebrospinal fever; this treatment was applied in fourteen acute and two chronic cases of meningitis. They also used in two chronic cases the serum of a patient who had recovered from pneumonia, and, furthermore, two patients with acute meningitis were injected intraspinally on the sixth and seventh days, respectively, with their own serum. These last two patients recovered; the four chronic patients all died; and of the fourteen treated with serum from recovered patients eight got well and six died. The authors state that the patients thus treated were unselected and cite figures showing that the recovery rate presented by the patients injected with human serum is much greater than that presented by other cases in the same hospital but not treated with serum—fifty such cases giving only four recoveries.

This work is not without practical bearing because it seems to reveal a source for antimeningococcal serum from which it may be possible to draw if other sources should fail. Whether serum from cases of meningitis is more potent in some way or other or safer than the serum from immunized animals is, of course, not known at present, and as yet we have no ready standard whereby to measure the actual value of any antimeningococcus serum. Antimeningococcus serum owes its properties to several distinct bodies, of which the most important probably is the antiendotoxin. The great toxic action of the meningococcus is well shown in the experiment by Davis in which he obtained a prompt and profound reaction in twenty minutes by injecting dead meningococci into a normal person; a profound intoxication resulted with violent headache, some delirium, vomiting, and later herpes and severe acute nephritis developed, but there were no special meningeal symptoms. The amount injected and the meningococcus used were the same as injected in a case of meningitis; in the latter, however, no special reactions followed the injection, showing that probably the patient had acquired a marked immunity to the endotoxin of the meningococcus, and hence we might be permitted to infer that the serum of patients that have recovered from meningitis may contain antiendotoxin in considerable quantities.

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[1] Jour. Infect. Dis., 1907, iv, 538.

[2] Lancet, 1907, 172, p. 1213.

[3] Jour. Path. and Bact., 1908, xii, 539.

DAMAGES FOR USE OF ALLEGED TESTIMONIAL.

The "Great American Fraud" articles in *Collier's Weekly* exposed the value to be attached to testimonials in favor of nostrums from prominent or locally well-known people, by disclosing some methods by which such testimonials are frequently obtained. Mr. Meriwether Smith, in the *Kentucky Medical Journal,* for August, gives an account of a fraudulent testimonial, published by the Foster-Milburn Company, of Buffalo, N. Y., in reference to Doan's Kidney Pills. It seems that Col. Jack P. Chinn, of Harrodsburg, Ky., is a man well known to almost every one in the neighborhood. It was with considerable chagrin, therefore, that he found a letter endorsing Doan's Kidney Pills, purporting to have been signed by himself and accompanied by his portrait, circulated in the neighborhood in a "patent-medicine" circular called Doan's Directory. Naturally this subjected him to considerable chaff and ridicule from his acquaintances, and even to a sinister suspicion that he must have sold his reputation to this quack concern, a course of action which in the south, at any rate, has always been regarded as disgraceful in one of social standing. Action was taken and various well-known legal expedients were practiced by the defendant's lawyers to head the action off, but fortunately they were defeated and a jury recorded a verdict of $2,500 in favor of Colonel Chinn. The question seems to have been fought along the line of invasion of the right to personal privacy, a right to which the courts in this country seem to be lamentably asleep. There are, however, two cases on record in which this right has been championed. In the first, a recent New York case, a young woman was refused damages for the unauthorized use of her picture as an advertisement, but the judge who delivered the opinion apparently confined it to the circumstances of the particular case, pointing out that a similar course in certain cases "might justly be found by a jury to cast ridicule or obloquy on the person whose picture was thus published." Moreover, three justices in a dissenting opinion pointed out that the right to privacy is the complement of the right to the immunity of one's person. In the other case, a man brought action in Georgia against an insurance company for the use of his picture in their advertisement. The justice who delivered the opinion, in which all the justices concurred, expressed himself as thoroughly satisfied "that the law recognizes within proper limits as a legal right the right of privacy, and that the publication of one's picture without one's consent, by another as an advertisement for the mere purpose of increasing the profit and gains of the advertiser, is an evasion [invasion?] of this right." Mr. Smith points out in the present article that the phenomenal success of "patent-medicine" companies in using forged and fraudulent letters recommending their nostrums, is largely due to the slowness of the courts in recognizing the right of the individual to recover damages for the invasion of this right of privacy.

THE MNEMIC THEORY OF DEVELOPMENT.

President Darwin's[1] inaugural address at the meeting of the British Association for the Advancement of Science, September 2, with its avowed adherence to the anti-Weismann doctrine of the inheritance of acquired characters, must have come as a shock to many of his hearers to whom this view had been only an exploded scientific heresy. It is evidence, however, that it will not down, and Darwin's adherence to it will be welcomed by a respectable quota of biologists, medical men and pathologists. If the study of plants has led Darwin to the belief in an inherited organic memory of the cells as an explanation of heredity and development, the idea ought, it would seem, to fit still better in the animal kingdom, where we are accustomed to expect psychic activities such as memory, even in their most rudimentary form, more than in plants. According to this mnemic hypothesis of Semon, as adopted by Darwin, somatic inheritance lies at the root of all evolution and involves the acceptance of the inheritance of acquired characters. He does not find that the idea of a special germ plasm, independent of the body cells generally, with its hypothetic determinants and biophores, accounts for the facts of ontogeny, that is, "the capacity of the ovum of developing into a more or less predetermined form"; it does not explain its automatic character. Development is to him an actual instance of habit. This mnemic theory, he holds, "makes the positive action of natural selection more obvious; if evolution is a process of drilling organisms into habits, the elimination of those that can not learn is an integral part of the process." The only basis for acceptance of any theory is that it best explains facts, and up to this time Weismann's theory has been so accepted by many. Darwin's attack on it will undoubtedly excite general comment and reopen the question with some who had considered it settled. Of those who have considered it settled there will perhaps be fewer among physicians than among biologists, for the clinical evidence of the inheritance of acquired characters is not always so easily disposed of as some writers on this subject have claimed.

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[1] Nature, Sept. 3.

Red Blood Counts.—J. R. Neal, Jr., and W. H. Buhlig, Chicago (*Quar. Bull. Northwestern Univ. Med. Sch.*), state that investigation made in young adults shows that the red cell count is distinctly above the average, 5,000,000, as usually accepted, and that the variations are large. This fact is of value in the proper interpretation of the significance of the total count

Medical News

CALIFORNIA.

Deaths Charged to Careless Nurse.—At the San Diego County Hospital three deaths are said to have occurred, September 18, as the result of carelessness of a young nurse who neglected to make proper disposition of a glass of atropin solution which these patients took in mistake for their medicine.

Beriberi in Alviso.—Dr. William Simpson, San José, health officer of Santa Clara County and state health inspector, states that the news item which appeared in The Journal, September 5, regarding beriberi in Alviso is incorrect. In San José there is a society known as the Asiatic Exclusion League, which requested the supervisors of Santa Clara County to investigate the reported epidemic of beriberi on the Alviso meadows, where great quantities of berries and small fruits are grown. Dr. Simpson investigated the matter and found one chronic case of beriberi, which had existed for more than seven months and had been seen by many physicians. Dr. Simpson, in company with Dr. William C. Rucker, P. H. & M.-H. Service, and Dr. Roscoe A. Whiffen, representing the city of San José, made a thorough examination of the camps said to be infected, and came to the conclusion that there was no danger and there was no reason to fear an epidemic of beriberi.

Personal.—Dr. Charles C. Falk, William H. Wallace and John N. Chain have been appointed members of the Eureka Board of Health.——Major Edward R. Schreiner, Medical Corps, U. S. Army, in charge of the United States General Hospital Presidio, of San Francisco, has been appointed honorary professor of medicine in the University of California.——Dr. Andrew W. Morton, San Francisco, has returned from Europe.——Dr. Oliver D. Hamlin, Oakland, has been appointed division surgeon for the Southern Pacific Railway, vice Dr. James P. Dunn, deceased.——Dr. Sydney R. Dannenbaum, pathologist at Mount Zion Hospital, San Francisco, has been appointed professor of principles and practice of medicine and clinical medicine at the College of Physicians and Surgeons, San Francisco.——Dr. Charles H. Bulson, Sacramento, has been elected chief surgeon of the Veteran's Home, Napa, vice Dr. Frank A. McMahon, resigned.——Dr. and Mrs. Harry F. Worley, Oakland, are taking a trip to Europe and the Holy Land.——Dr. and Mrs. Victor G. Vecki, San Francisco, have started for Europe.——Dr. E. Scott Blair, San Bernardino, has succeeded Dr. A. P. Williamson as medical superintendent of the Southern California State Hospital for the Insane, Patton——Dr. Leon J. Roth, Los Angeles, has gone to Europe.

COLORADO.

McCormack in Colorado.—Dr. J. N. McCormack, chairman of the Committee on Organization of the American Medical Association, addressed the physicians of Boulder, September 11, on "A Plea for Such Cooperation of the Medical Profession and the People as Will Make Health More Contagious than Sickness." In the evening he delivered a public lecture on "Things About a Doctor the Public Ought to Know."

State Society Meeting.—At the thirty-eighth annual meeting of the Colorado State Medical Society, held in Denver, September 8-10, the following officers were elected: President, Dr. Peter J. McHugh, Fort Collins; vice-presidents, Dr. David H. Coover, Denver; D. Gilmore Thompson, Trinidad; Charles H. Graves, Canon City, and Orland P. Shippey, Saguache; secretary, Dr. Melville Black, Denver (re-elected), and treasurer, Dr. George W. Miel, Denver (re-elected). The society decided to meet at Steamboat Springs in 1909.

Personal.—Dr. Benjamin L. Jefferson, Steamboat Springs, who has represented Routt County in the legislature for the last ten years, has been made presidential elector on the Democratic ticket.——Dr. Mary E. Phelps, Canon City, was elected president of the Colorado Woman's State Medical Society, at its meeting, September 8.——Dr. I. B. Perkins and family, Denver, have returned from Europe.——Dr. C. F. Wilkins, Laporte, fractured his right arm while cranking his automobile, August 27.——The license of Dr. Henry H. Van Hummell is said to have been revoked on account of his acceptance of a fee on promise to cure advanced tuberculosis.

ILLINOIS.

Rabies from Bite of Squirrel.—Seven residents of Springfield recently bitten by a squirrel found to be suffering from rabies have gone to Chicago for treatment in the Pasteur Institute.

New Hospital for Evanston.—Work has been begun on the new hospital to be erected by the Sisters of St. Francis on Ridge Avenue, Evanston. The building will be four stories in height, 55 by 180 feet, and will cost $180,000.

Physician Fined for Violating the City Code.—Dr. Samuel R. Harwood, East St. Louis, is said to have pleaded guilty, August 31, to a charge of failing to report a birth to the health commissioner in compliance with the city code, and to have been fined $10 and costs.

Communicable Diseases.—Smallpox is reported from Spring Valley.——Gillespie is reported to have an epidemic of typhoid fever.——Scarlet fever and smallpox are reported to be epidemic at Taylorville.——Saint Anne is threatened with an epidemic of diphtheria and the opening of school has been delayed one week on account of the prevalence of the disease.——In the Spaulding Institute, Nauvoo, 5 cases of scarlet fever are reported.——The opening of the schools of Abingdon has been postponed on account of the prevalence of scarlet fever.——The Girard Board of Health issued a proclamation, September 8, closing schools and churches and prohibiting other public gatherings, owing to an epidemic of diphtheria.

Chicago.

Home from Abroad.—Dr. and Mrs. John B. Murphy and family arrived, September 19, after spending the summer abroad.——Dr. and Mrs. A H. Brumback have returned from Europe.

School Children Barred.—During the last week 700 pupils of the Chicago public school were barred from school, the result of examination by medical inspectors. Less than ten of this number had symptoms of contagious disease, but many had parasitic diseases.

Medical Inspection of Homes.—During the last seven weeks the 75 medical inspectors detailed to instruct mothers in the proper care of infants during the hot weather have visited 43,784 homes. The inspectors found 2,410 cases of illness and 24,702 unvaccinated persons.

Contagious Diseases.—There were reported to the department of health, during the week ended September 19, 275 cases of contagious disease, distributed as follows: Diphtheria, 83; scarlet fever, 79; typhoid fever, 52; tuberculosis, 23; whooping cough, 20, and measles 5.

College Opens.—The College of Physicians and Surgeons, the College of Medicine of the University of Illinois, will begin its twenty seventh annual course of instruction September 28. The opening exercises will be held in the assembly hall of the college, Congress and Honore streets. Dr Channing W. Barrett will deliver the address.

Hospital Notes.—Orthodox Jews in Chicago have organized an association to erect and maintain a Jewish hospital on the West Side. About $10,000 has been already subscribed and a permanent building will be erected. The corporation is licensed as Miamonides Kosher Hospital Association, and it is proposed to carry out the orthodox Jewish dietary laws and habits in the institution.——On September 5 the health department is said to have instructed the police to close a private dispensary conducted by Mrs. Anna Breckler, 1151 North Robey Street.

Statement of Mortality.—There were 525 deaths reported from all causes during the week ended September 19, 93 fewer than for the corresponding week of last year and 31 fewer than for the preceding week of this year. The chief decline has been in child mortality, as among children under 5 years of age there were 70 fewer deaths than in the preceding week. Acute intestinal diseases caused 108 deaths; tuberculosis, 77; heart diseases, 44; violence (including suicide), 43; nephritis, 31, and consumption, 28. Of the communicable diseases, diphtheria and scarlet fever each caused 6 deaths and measles 2.

INDIANA.

Defendant Wins.—In the suit for alleged malpractice brought by Mrs. Eliza Bower, Sulphur Springs, against Dr. Burton O. Post, in which the plaintiff asked $2,500 damages for what she claimed to be improper treatment of a fractured arm, the jury returned a verdict for the defendant.

To and from Europe.—Dr. Edward J. McOscar, Fort Wayne, has returned from Europe.——Dr. Charles E. Barnett, Fort Wayne, sailed for Europe September 24.——Dr. Jacob O. Malsbury, Peru, has started for Europe.——Dr. and Mrs. Frank Randolph, Elkhart, have returned after three months abroad.

Ill, Injured and Operated.—Dr. Edwin Walker, Evansville, was operated on recently at Mercy Hospital, Chicago, for cyst of the thyroid gland.——Dr. William H. Wood, Mishawaka.

en route to New Mexico, was seized with hemorrhage September 14 and was removed to the Trinidad (Colo.) Hospital, where he is said to be in a critical condition.——Dr. Richard E. Holder, Columbus, fractured his arm recently while cranking his automobile.

LOUISIANA.

Medical College Opening.—The Medical Department of Tulane University of Louisiana will open for its new year the first week in October. Three new buildings will be opened at this session, the Richardson Memorial Medical Building, the Richardson Chemical Building, and the medical dormitory. Dr. George Dock, formerly of the University of Michigan, Ann Arbor, has arrived to assume his position as professor of medicine.

New Board of Health.—The governor has appointed a new State Board of Health, which will assume office October 1. Dr. D. Harvey Dillon, Many, has been named to succeed Dr. Clifford H. Irion, New Orleans, as state health officer. The other members of the board are Drs. Benjamin A. Ledbetter and Hermann Oeschner, New Orleans; Beverly W. Smith, Franklin; Theophilus T. Tarlton, Grand Coteau; Sidney D. Porter, Moreauville; and George W. Gaines, Tallulah, the latter being the only holdover member of the board.

Tuberculosis Clinic Established.—The new free clinic of the Louisiana Antituberculosis League is expected to be in operation in October. The staff of the clinic is made up as follows: Dr. J. George Dempsey, children up to 12 years of age; Drs. A. I. Weil and Otto Joachim, consulting laryngologists; Drs. Sidney K. Simon and Jacob A. Storck, consulting physician on contagious diseases; Dr. Edward L. McGehee, in charge of male service; Drs. Sarah T. Mayo and Edith Loeber, in charge of female service; Dr. Albert B. Brown, consultant on genito-urinary diseases; Dr. C. A. Bahn, consultant on diseases of the eye; Dr. Joseph N. Roussell, consultant on diseases of the skin; Dr. E. M. Hummel, consultant on diseases of the nerves; and Dr. Wallace J. Durel, especial consultant. The league has an antituberculosis exhibit at the Home Manufacturers' Exhibition.

MARYLAND.

Personal.—Dr. George Reuling, Baltimore, has returned from Europe.——Dr. James J. Mills, Baltimore, is in Paris.——Dr. Victor C. Cullen, formerly of Washington County, has been elected assistant to the medical superintendent of the Maryland Tuberculosis Sanatorium.

State Society Meets.—At the semi-annual meeting of the Medical and Chirurgical Faculty of Maryland, held in Ocean City, September 15-17, the state care of the insane was endorsed. The society has raised $25,000 for the completion of its library building, placing a mortgage on its property on Cathedral Street whereon the building is to be erected. The mortgage is for five years at 5 per cent.

Need of Hospital for Colored Insane.—The report of Dr. Arthur P. Herring, secretary of the State Lunacy Commission, urges the need of a hospital for negroes in connection with the State Hospital at Springfield. He will soon start on an inspection of almshouses on the Eastern Shore. He also proposes to compile for the use of the medical profession a hand book containing the laws relating to insanity and important information concerning private institutions for the care of the insane.

Baltimore.

Charge of Illegal Practice Dismissed.—The charge of practicing medicine without a license, made by the president of the State Board of Medical Examiners, against Dr. Joseph Reynolds has been dismissed, as it was shown that he had been a practicing physician prior to 1892 and thereby entitled to practice by the law passed in that year. He stated that he did not understand the law and had neglected to register as therein required.

MICHIGAN.

European Tourists.—Drs. Jean A. Vernier and Minta Proctor Kemp, Detroit, have returned after spending the summer abroad.——Dr. Henry M. Cunningham, Marquette, has returned from abroad.——Dr. and Mrs. Harry J. Hornbogen, Marquette, sail for Europe this month.

Tent Colony Established.—A tent colony has been established in the suburbs of Kalamazoo for advanced and highly contagious cases of tuberculosis. Seven Ottawa tents, one pavilion and one shack for four patients were put up within two weeks after "Blue Star" day, held under the auspices of the local antituberculosis society, when $700 was raised. It is expected that the colony will be turned over to the health board of the city in due course.

Medical Society Meets.—The twelfth annual meeting of the Upper Peninsula Medical Society closed at Marquette, September 3. The following officers were elected: Dr. Alfred W. Hornbogen, Marquette, president; Drs. Edward T. Abrams, Dollar Bay, and George Bjorkman, Gladstone, vice-presidents; and Dr. William D. Whitten, Baltic, secretary. The next meeting will be held in Calumet. The society by resolution requested that the Upper Peninsula be represented on the State Board of Health and that Dr. Oscar C. Breitenbach, Escanaba, be appointed the member for the peninsula.

MISSOURI.

Will Add to Sanitarium.—Dr. Charles R. Woodson has commenced construction of an addition to his sanitarium in St. Joseph. The building will be a two-story brick structure, will accommodate about 25 patients, and will cost about $20,000.

Personal.—Dr. George R. Highsmith, Carrollton, is suffering from angina pectoris.——Dr. William Weiss *has been* appointed vaccine physician by the health department of St. Louis.——Dr. Thomas E. Graham has resigned as assistant city physician of St. Louis.——Dr. Walter S. Wheeler has been appointed health commissioner of Kansas City, and Drs. George P. Pipkin, Carl A. Jackson, J. Park Neal, W. T. Thornton, Earl C. Reiger and George Ringle have been appointed physicians in the hospital department of Kansas City.

NEBRASKA.

Tag-Day Plan.—The Clarkson Hospital Association held a Tag Day, September 9, to raise $6,000 to complete the $20,000 fund necessary for the erection of the hospital.

Returned from Siam.—Dr. Paul G. Wooley, who for the last five years has been director of the Siamese Government Serum Laboratory in Phrapatoom and chief inspector of health and medical advisor to the minister of the interior, has accepted the position of associate professor of clinical pathology in the University of Nebraska College of Medicine, Omaha.

NEW MEXICO.

New Sanatorium.—Alamo Cottage Sanatorium for the Treatment of Tuberculosis, Alamagordo, is said to be an assured fact, as the founder, Mr. W. A. Reed, has bought 20 acres of land one mile and a half from Alamagordo on which to locate the sanatorium, and as work has already been commenced on the administration building.

State Society Meeting.—The twenty-seventh annual session of the New Mexico Medical Society was held in Albuquerque, September 2 and 3. The following officers were elected: President, Dr. George K. Angle, Silver City; vice-presidents, Drs. John W. Elder, Albuquerque; Frances T. B. Fest, East Las Vegas, and Robert L. Bradley, Roswell; secretary and editor, Dr. George S. McLandress, Albuquerque; and treasurer, Dr. Charles G. Duncan, Socorro.

NEW YORK.

Fire in Insane Asylum.—The main building of the Long Island Home was partly destroyed by fire September 16, with an estimated loss of from $15,000 to $20,000. There were 90 inmates in the building and it was with considerable difficulty that they were all hurried to places of safety.

Transfer of Insane.—On September 15, 250 female patients were taken from the Central Islip State Hospital and 50 men from the Kings and Park state hospitals, which are very much overcrowded, and transferred to the new institution for the chronic insane which has just been completed at Poughkeepsie.

New York City.

Rabid Dogs.—The Department of Health in 1906 received 101 rabid dogs for examination; in 1907 it received 181, and if the record keeps up for this year the number will be about 250. All these dogs had rabies.

Personal.—Dr. Fred H. Albee sailed for Europe September 16.——Dr. Francis Delafield returned from Europe September 15.——Dr. William T. Bull's condition has improved very much.——Dr. George B. McAuliffe fell from a street car September 15, sustaining a Pott's fracture of the right leg.

Low Death Rate Continues.—The death rate for the week ended September 12 was next to the lowest for the summer, being 14.38 per 1,000 population. For the corresponding week of last year it was 16.18. During this week above named 578 persons died in the *tenements*, while in 1907 there were 668 during the corresponding week. The number of deaths of children under 5 years of age was 428, as compared with 534 for the previous year.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended September 12, 423 cases of tuberculosis, with 153 deaths; 189 cases of diphtheria, with 19 deaths; 65 cases of measles, with one death; 93 cases of scarlet fever, with 3 deaths; 132 cases of typhoid fever, with 17 deaths, 5 cases of whooping-cough, with 3 deaths; 4 cases of cerebrospinal meningitis and 6 deaths; 14 cases of varicella, and one case of smallpox, a total of 924 cases and 202 deaths

Coney Island Camps.—The Health Department has ordered closed the camps at Coney Island because of alleged insanitary conditions prevailing there. It is claimed that there is a lack of sewerage and careless disposal of garbage. About one month ago the department gave warning that such a course would be pursued if the conditions were not remedied. There are about 250 tents on the beach. Lawyer Roy has obtained an injunction restraining the Health Department from interfering with the tent-dwellers. A hearing will be held next week.

NORTH CAROLINA.

Hines Memorial Meeting.—The Wake County Medical Association has decided to devote the October meeting to memorial exercises in memory of the late Dr. Peter E. Hines, Raleigh

Personal.—By the will of the late Major S. G Ryan, Raleigh, several thousand dollars were bequeathed to Dr. Hubert Haywood, Raleigh, in "appreciation of his long and faithful professional services in my family."——Dr. Myers G. Hunter, Charlotte, was operated on for appendicitis at St. Peter's Hospital, Charlotte, September 10.

Hospital Association Organized.—The ladies of Statesville have organized the Statesville Hospital Association to raise funds for Billingsley Hospital. This hospital, which was built by the Rev A. S. Billingsley, is unendowed and, according to the provisions of the donor, must be maintained by funds provided by the citizens.

Hydrophobia.—Dr. C A. Shore, pathologist of the State Board of Health, has recently pronounced as having had rabies a dog which is known to have bitten seven persons and many other dogs. The individuals who were bitten are now under treatment in the Pasteur Institute in Raleigh. The authorities are to be urged to enact most rigid and severe rules on the keeping and bringing of dogs within the city limits

PENNSYLVANIA.

Personal.—Dr. Charles E. Woodward, secretary of the West Chester board of health, has been reappointed for a five years' term——Dr. E. C Dort, Pittsburg, sailed September 16, from Vancouver for Bangkok, and from there will go to his post in northern Siam, where he will have charge of Van Santvord Memorial Hospital at Lakawn.——Dr. George A. Ickes, Altoona, is said to be critically ill with typhoid fever.

Typhoid Fever.—In order to prevent the spread of typhoid fever the school board of Wilkes-Barre has adopted the rule that every pupil must bring a bottle of boiled water to school -- The typhoid situation at Susquehanna is serious, as 14 cases have developed in the last ten days——Butler is said to be threatened with another epidemic of typhoid.——There are many cases in Williamsport.

Communicable Diseases.—Nine cases of diphtheria were reported at Greensburg, and a portion of the Seventh Ward public school was closed September 18——The government, the Pennsylvania Railroad and the traction companies are cooperating with the State Health Department in endeavoring to stamp out smallpox in the Cumberland Valley. Investigation by the state medical inspectors has revealed that cases supposed to have been chickenpox have existed for several weeks in Camp Hill and other places on the west bank of the Susquehanna River.——Dr. James C. Mewhinney of Spring City is reported to have been fined $52 20 by the health authorities for failure to report a case of typhoid fever.

State Society Meeting.—At the annual meeting of the Medical Society of the State of Pennsylvania, held in Cambridge Springs, September 14-17, the following officers were elected: President, Dr. George W. Wagoner, Johnstown; vice-presidents, Drs. James I. Johnston, Pittsburg; Glennis E Humphrey, Cambridge Springs; Lowell M. Gates, Scranton, and Samuel Z. Shope, Harrisburg; secretary, Dr. Cyrus L. Stevens, Athens; assistant secretary, Dr. Theodore B. Appel, Lancaster, treasurer, Dr. Clarence M. Harris, Johnstown; trustees, Drs George W. Guthrie, Wilkes-Barre; George D. Nutt, Williamsport, and Jefferson H. Wilson, Beaver; delegates to the American Medical Association, Drs William L Estes, South Bethlehem; Thomas D. Davis, Pittsburg; Fremont W. Frankhauser, Reading, and Samuel Wolfe, Philadelphia; and alternates, Drs. Alexander G. Fell, Wilkes-Barre; John C. Price, Scranton; Luther B Kline, Catawissa; John B. Lowman, Johnstown; John B McAlister, Harrisburg; William T. Williams, Mount Carmel, and Henry D. Jump and Wendell Reber, Philadelphia. Dr. James H. MacKee, Philadelphia, was made chairman of the section on medicine; Dr. George W. Guthrie, Wilkes-Barre, chairman, and Dr. Jonathan M. Wainwright, Scranton, secretary of the section on surgery; Dr. William C. Posey, Philadelphia, chairman, and Dr. Francis R. Packard, Philadelphia, secretary of the section on specialties Bedford Springs was selected as the place of meeting for 1909.

Philadelphia.

Personal.—Dr. Clarence A. Veasey, who for several years has been assistant professor of diseases of the eye in Jefferson Medical College and ophthalmic surgeon to the Methodist Episcopal Hospital, has resigned——Dr James M. Anders, G Oram Ring and Joseph F. Gibb have returned from Europe.

Medical Schools Open.—The annual opening exercises of Jefferson Medical College were held in the college buildings September 24 The annual address was delivered by Dr. Henry W. Stelwagon, professor of dermatology——The annual opening exercises of the Medical Department of the University of Pennsylvania were held in the college September 25, in conjunction with the opening of the university in general.

Health Report.—The total number of deaths reported for the week ended September 19 aggregated 425, a decrease of 20 from the preceding week and a decrease of 46 from the corresponding week of last year The principal causes of death were: Typhoid fever, 13; scarlet fever, 2, pertussis, 2, diphtheria, 5; consumption 41; cancer, 22, apoplexy, 16; heart disease, 30; arteriosclerosis, 8; acute respiratory diseases, 30; enteritis, 49, hepatic cirrhosis, 8, appendicitis, 8; Bright's disease, 28, premature birth, 9, congenital debility, 15; senility, 6; suicide, 3; accidents, 19, and marasmus, 8 There were 161 cases of contagious disease reported, with 19 deaths, as compared with 149 cases and 23 deaths reported in the previous week.

SOUTH DAKOTA.

County Society Organized.—The physicians of Beadle County have organized a county medical society on standard lines This organization is the result of the visit to Huron of Dr. J. N. McCormack, Bowling Green, Ky., representative of the American Medical Association.

Antituberculosis Association Organized.—After the meeting of the South Dakota State Medical Association, an Association for the Study of Tuberculosis was organized with the following officers: President, Dr. Francis M. Crain, Redfield; vice presidents, Drs Cheney C Gross, Yankton; and A. E Clough, Deadwood; secretary, Dr. George W. Potter, Redfield; and treasurer, Dr. E C. Issenhuth, Redfield

State Society Meeting.—The twenty-seventh annual meeting of the South Dakota State Medical Association was held in Yankton, September 2 4 On the first evening Dr. J. N McCormack delivered a public address on the relations of the physician to the people The following officers were elected: Dr Samuel A Brown, Sioux Falls, president; Drs. Thomas B. Smiley, Mitchell, and William E Moore, Tyndall, vice presidents; and Dr. Robert D Alway, Aberdeen, secretary-treasurer. The next meeting will be held in Aberdeen

WASHINGTON.

Society Favors New Law.—King County Medical Society, at its meeting August 31, requested its delegates to the State Medical Association to urge the passage of a resolution recommending that the next legislature amend the state law by adopting the "Arizona law" defining the practice of medicine more clearly.

Hospital Notes.—A maternity hospital has been erected at Hoquian by Dr. R. F. Hunter.——Dr. Wilhelmy has purchased the old McCoy Hospital at Wenatchee.——The hospital at South Bend has been enlarged and remodeled. The contract for the Naval Hospital at the Puget Sound Navy Yard, Bremerton, has been awarded on a bid of $139,000.

Personal.—Dr. Charles M. Buchanan, for sixteen years physician and superintendent of Tulalip Indian Agency, has been made assistant superintendent of Haskell Institute, Lawrence, Kan.——Dr. Fred J. Whittaker has been appointed resident physician at St. Luke's Hospital, Spokane——Dr. Elmer D. Olmsted, Spokane, is reported to be seriously ill with nephritis.

GENERAL.

Tuberculosis Conference.—The International Conference on Tuberculosis, made up of representatives of tuberculosis associations from all parts of the world, was held in *Philadelphia*, September 23-26. A report of the conference will appear in THE JOURNAL.

Personal.—Dr. Fred B. Bowman, assistant clinical pathologist in the United States laboratory in the Philippine Islands, has been appointed physician to the St. Paul Hospital.——Esther F. Hassan, who was nurse in the Spanish-American War, has been appointed chief of the corps of women nurses authorized for the Navy at the last session of Congress.

Warning Against Book Agent.—The Oxford University Press writes: "We wish to warn the medical profession against a man who is going about representing himself as our agent and calling himself O. G. Beauvang, and other aliases. He is about 5 feet and 5 inches tall, has a light complexion and is stockily built. We would be pleased to be informed of his whereabouts. He is not employed by us and has no right to take orders for us."

Coming Meetings.—Dr. Henry M. Bracken, Minneapolis, secretary of the Conference of State and Provincial Boards of Health of North America, announces the twenty-third annual meeting, to be held in Washington, D. C., September 25 and 26, under the presidency of Dr. Newell K. Foster, Sacramento, Cal.——The Southern Medical Association will hold its annual meeting at Atlanta, November 10 to 12, under the presidency of Dr. George C. Savage, Nashville, Tenn. The railways have granted excursion rates of a fare and a half plus 25 cents for the return trip. The tickets are on sale November 7 to 9, and are good for return until November 14, leaving Atlanta with three days' transit limit.——The next annual meeting of the Association of Seaboard Air Line Railway Surgeons will be held in Columbia, S. C., October 27 and 28, under the presidency of Dr. Louis S. Oppenheimer, Tampa, Fla.

INTERNATIONAL CONGRESS ON TUBERCULOSIS.

(By telegraph from our Washington Correspondent.)

WASHINGTON, D. C., Sept. 22, 1908.

The sixth International Congress on Tuberculosis was formally opened last night, over 1,500 people being present. On the stand were James S. Wilson, Secretary of Agriculture; Gen. George M. Sternberg, U. S. Army retired, treasurer of the congress; Dr. Lawrence M. Flick, Philadelphia, chairman of the central committee; Patten MacDougall, vice-provost, Edinburgh, Scotland; Dr. Abraham Jacobi, New York; Dr. Samuel G. Dixon, state health officer of Pennsylvania, and Dr. Eduardo Liceaga of Mexico.

Commissioner MacFarland presided and welcomed the visitors on behalf of the citizens of the district. He called attention to the new municipal hospital as an example of the best type of construction. He also referred to the important step achieved by securing the law requiring registration of those afflicted with tuberculosis and free examination of sputum.

ACHIEVEMENTS OF SCIENCE.

Commissioner MacFarland then introduced General Sternberg, who gave a history of the great achievements of science over smallpox, cholera, bubonic plague and yellow fever. He called attention to the frightful mortality from tuberculosis and predicted that the present congress and exhibition would stimulate the antituberculosis crusade in all parts of the country.

TUBERCULOSIS IN ANIMALS.

Secretary Wilson showed what measures the Department of Agriculture has undertaken toward the prevention of the importation of tubercular animals into the United States. He quoted statistics showing the percentage of tubercular cattle in the country, and closed by giving the method of inspection followed in the District of Columbia.

Dr. Samuel G. Dixon told of the crusade in Pennsylvania during the past year.

Dr. Henry G. Beyer, medical director United States Navy, spoke of American progress in the fight on tuberculosis, and paid a fitting tribute to the instructive contributions from abroad.

Dr. Lawrence F. Flick, chairman of the central committee, spoke of American progress in the fight on tuberculosis, and spoke hopefully of the prospect of greatly reducing the mortality from this disease. He extended an invitation to the audience to visit the exhibits and called attention to their elaborateness and the valuable instruction to be obtained from them.

The Exhibits.

Space is inadequate to describe the magnitude of the Tuberculosis Exhibition. Valuable and elaborate exhibits from all over the world are arranged for the inspection of the crowds of those interested. The most important ones noticed are briefly referred to below.

NATIONAL EXHIBITORS.

Argentina shows plans of her dispensaries and hospitals, as well as mortality charts and methods of educational instruction.

Austria contributes charts, books and pathologic specimens.

Belgium sends plans of hospitals and popular literature.

Brazil is represented by models, maps and mortality records.

Canada is represented by a magnificent series of pathologic specimens prepared at McGill University.

France sends microscopic specimens, to be demonstrated by Dr. Paul Courmont and Professor Arloing. Photographs and samples of drugs used in the treatment of tuberculosis are also shown.

Germany's exhibit is one of the most complete. It is presented in four sections. That of the German central committee consists of illustrations showing the pathology of tuberculosis, mortality records, photographs of various sanatoria, illustrations of sanitary dwellings and copies of literature. The Imperial Board of Health presents records of research work, maps and pathologic specimens. The various German insurance offices present maps, tables and charts. A prominent feature is a model of the workingmen's sanatorium of the national insurance office of Berlin at Beelitz, which accommodates nearly 1,200. The German Red Cross Society demonstrates the manner of combating tuberculosis by books and illustrations. The fourth section consists of private exhibitors, and includes many publications and instruments.

Great Britain is represented by valuable pathologic preparations contributed by the Royal College of Surgeons, the Museum of Westminster Hospital, St. George's Hospital, University College Hospital, the Western Infirmary of Glasgow, Humphrey Museum, University of Manchester and the School of Medicine of the University of Leeds. Prominent among these are Dr. Sidney H. C. Martin's specimens illustrating feeding experiments.

Japan is represented by books and charts from Kitasato's institute.

Russia exhibits pharmaceutical products.

Sweden shows maps and statistics and their antituberculosis methods. [In this connection the reader will be interested in an editorial in this issue on Sweden's work in the crusade. —ED.]

Switzerland shows charts, diagrams, photographs and reports.

Uruguay shows stereoscopic views, photographs and charts.

THE PUBLIC SERVICES.

The United States Public Health and Marine-Hospital Service shows a large model of the tuberculosis sanatorium at Fort Stanton, N. M., models showing details of its arrangement, and a large number of wall charts illustrating tuberculosis from the standpoint of vital statistics. The diagnostic and therapeutic uses of electricity are shown by apparatus. The Service hygienic laboratory exhibits many pathologic specimens and demonstrates the growth of the tubercle bacillus on fruits and vegetables.

The United States Army, in its exhibit, shows models of special wards constructed at Fort Bayard, N. M., for tuberculous patients. Wall maps, charts and statistics are also shown.

The Medical Department of the Navy presents a model of its sanatorium at Las Animas, Colo., and many photographs illustrating fully the details of this hospital.

EXHIBITS OF GOVERNMENTAL DEPARTMENTS AND BUREAUS.

The Department of the Interior is well represented. The Smithsonian Institution and the Bureau of Indian Affairs show maps of Indian reservations with population, prevalence of tuberculosis, and photographs showing present living conditions where tuberculosis is prevalent. Plans of a new sanatorium for Indians are shown. The entire exhibit is an object lesson on the destructive influence of civilization on the American Indian.

The Department of Agriculture shows a number of specimens of experimental tuberculosis and presents many gross pathologic specimens showing tuberculosis in various animals, and the manner in which it may be communicated.

The census office exhibits a complete set of its reports and many valuable comparative tables. Prominent features of this exhibit are a large wall map showing registration areas and diagrams demonstrating the international classification of causes of death One of the interesting features of this exhibit is a punching and tabulating machine in full operation. The government printing office shows an apparatus for the disposal of sputa in crowded factories and workshops, consisting of an automatic device for disinfection and removal of sputa without the operator coming in contact with cuspidors.

STATE EXHIBITS.

Owing to lack of space it is impossible to more than mention the splendid showing made by the exhibits of the various states. The state exhibits show how thoroughly the profession is aroused on the subject.

Colorado has a large exhibit. Special exhibits have been given by various Colorado sanatoria.

Connecticut shows plans of many sanatoria.

The District of Columbia shows the plans of the new municipal hospital which has many new features. A concrete cottage for workmen to cost $1,200 is on exhibition. Many kinds of apparatus are shown.

Maryland has a large exhibition of photographs, literature and pathologic specimens from various colleges and institutions.

Massachusetts has a series of photographs showing the factory conditions in that state, and also a very large and complete exhibition contributed by the hospital associations and Boston University.

New York and Pennsylvania present complete and thorough exhibitions of actual work being accomplished in these states and deserve great credit.

Maine, Michigan, Minnesota, Ohio, Rhode Island and Wisconsin have exhibits that reflect credit to their communities in this, the greatest congress of the century.

It really amounts to a world's fair on tuberculosis. It is illustrative of what is being done around the globe in the fight against tuberculosis. It is safe to say that no such exhibition has ever been seen before.

Prizes Offered.

Reference has already been made to the prizes offered in connection with this exhibition. The following is a more complete list of these awards than was given in our previous issue:

A. The Hodgkins Fund Prize of $1,500, offered by the Smithsonian Institution, for the best treatise on the "Relation of Atmospheric Air to Tuberculosis."

B. A prize of $1,000 for the best evidence of effective work in the prevention or relief of tuberculosis, by any voluntary association, since the last International Congress in 1905.

C. A prize of $1,000 for the best exhibit of an existing sanatorium for the treatment of curable cases of tuberculosis among the working classes.

D. A prize of $1,000 for the best exhibit of a hospital for the treatment of advanced pulmonary tuberculosis.

E. A prize of $1,000 for the best exhibit of a dispensary or kindred institution for the treatment of the tuberculous poor.

F. A prize of $1,000 for the best exhibit of a furnished house for a family or group of families of the working class, designed in the interest of the crusade against tuberculosis.

G. Prizes for educational leaflets. A prize of $100 is offered for the best leaflet submitted in each of the following classes:

- For adults (not to exceed 1,000 words).
- For teachers (not to exceed 2,000 words).
- For mothers (not to exceed 1,000 words).
- For indoor workers (not to exceed 1,000 words).
- For dairy farmers (not to exceed 1,000 words).
- For school children in grammar school grades (not to exceed 500 words).
- Pictorial booklet for children in primary grades and in the nursery.

Besides the money prizes, gold and silver medals and certificates of award are offered in each of the instances named.

The Transactions of the Congress.

It is not too late to visit the congress and to secure membership. Aside from the opportunities afforded at the meetings in Washington, membership in the congress will secure the published transactions in four volumes, which will be of vast importance to any one wishing to keep himself abreast of the times in this important subject, as the papers read at the congress will cover practically all phases of tuberculosis, being interesting alike to the pathologist, the practicing physician, the health officer and the sociologist.

The coming week will be given to the scientific work of the congress, which will be carried on in seven sections. The principal events of these meetings have been announced in previous issues of THE JOURNAL (August 8, 22, 29, and September 12). We give below the program of the division devoted to the pathologic side of the subject. Much of the rest of the programs has already appeared.

Program of Section I. Pathology and Bacteriology.

MONDAY, SEPTEMBER 28, 2:30 P. M.

BIOLOGY OF THE TUBERCLE BACILLUS.

1. Remarks by the President of the Section, Dr. William H. Welch.
2. Election of Honorary Presidents of the Section.
3. Dr. Milton J. Rosenau, Washington: The Viability of the Tubercle Bacillus.
4. Prof. John Weinzirl, Ph.D., Seattle, Wash. The Action of Diffuse Light on *Bacillus tuberculosis.*
5. Dr. J. von Szabóky, Budapest-Gleichenberg: A Contribution to the Knowledge of the Cultural Characters of Tubercle Bacilli (in German).
6. Dr. N. Jancsó and Dr. A. Elfer, Klausenburg: Comparative Studies of the Practically Important Acid-fast Bacilli (in German).
7. Prof. S. Arloing and Dr. Paul Courmont, Lyons: New Homogeneous Cultures of Tubercle Bacilli (in French).
8. Prof. A. Rodet, Montpellier: The Virulence of the Tubercle Bacillus in Relation to the Clinical Development of Pulmonary Tuberculosis (in French).
9. Dr. A. Parker Hitchens, Glenolden, Pa.: A Chamber in Which Dried Tubercle Bacilli May be Handled Without Danger.

TUESDAY, SEPTEMBER 29, 9:30 A. M.

CHANNELS OF INFECTION, LATENT INFECTION, PREDISPOSITION, HEREDITY.

1. Prof. N. Ph. Tendeloo, Leyden: Channels of Infection.
2. Dr. Julius Bartel, Vienna: Concerning the Question of Channels of Infection (in German).
3. Dr. G. Kuss, Angicourt, France: Sources and Paths of Tuberculous Contagion (in French).
4. Dr. S. Bernheim, Paris: The Portals of Entry of Tuberculosis (in French).
5. Prof. Francis Harbitz, Christiania: Concerning Latent Tuberculosis.
6. Dr. Carl Hart, Berlin: The Predisposition of the Apices of the Lungs and the Law of Localization of the First Focus of Disease (in German).
7. Prof. A. S. Warthin, Ann Arbor, Mich.: The Present State of Our Knowledge Concerning Heredity in Tuberculosis.
8. Surgeon-General Simon von Unterberger, St. Petersburg: Heredity in Tuberculosis (in German).
9. Dr. J. von Szabóky, Budapest-Gleichenberg: The rôle of Inherited Predisposition in the Etiology of Tuberculosis (in German).
10. Prof. B. Stiller, Budapest: Pulmonary Tuberculosis and Asthenia Universalis (in German).

TUESDAY, SEPTEMBER 29, 2:30 P. M.

JOINT SESSION OF SECTIONS I AND II. OPSONIC INDEX. CONJUNCTIVAL AND CUTANEOUS TUBERCULIN REACTIONS. SERUM DIAGNOSIS.

1. Dr. T. W. Hastings, New York: The Opsonic Index in Certain Tuberculous Infections.
2. Dr. George P. Sanborn, Boston: The Opsonic Index in Early Diagnosis.
3. Dr. H. M. Kinghorn, Dr. D. C. Turchell, Dr. N. M. Carter and Mr. F. W. O. Werry, B.A., Saranac Lake, N. Y.: The Accuracy of the Tuberculin Opsonic Test and Its Value as a Control to Tuberculin Treatment in Pulmonary Tuberculosis.
4. Dr. Mary C. Lincoln, Chicago: The Tuberculin Opsonic Index in the [illegible] ment of Tuberculosis.
5. Dr. J. [illegible] est-Gleichenberg: Opsonins and Their [illegible] Prognosis and Treatment (in German).
6. Prof. A. Calmette, [illegible] Application of the Cutaneous and C[illegible] Reactions in the Diagnosis of Tube[illegible] French).
7. Dr. C. von Pirquet, Vienna: Observations on the Cutaneous Tuberculin Reaction in 200 Children Examined Postmortem (in German).
8. Dr. A. Wolff-Eisner, Berlin: Cutaneous and Conjunctival Reactions (in German).
9. Dr. Arnold C. Klebs, Chicago: Cutaneous and Conjunctival Reactions.
10. Dr. E. R. Baldwin, Saranac Lake, N. Y.: Conclusions from 1,087 Conjunctival Tuberculin Tests.
11. Dr. Fernand Arloing, Lyons: The Ophthalmic Reaction (in French).
12. Dr. Ladislaus Detre, Budapest: The Application of the Differential Cutaneous Reaction in the Diagnosis, Pathology and Treatment of Tuberculosis (in German).
13. Dr. S. Trimescu, Roumania: The Ophthalmic Reaction with the Paratuberculins.
14. Dr. S. Trimescu, Roumania: The Prognostic Value of the [illegible]eous Reactions.
15. Dr [illegible] Lyons: The Present State of Serum [illegible]

WEDNESDAY, SEPTEMBER 30, 9:30 A. M.

INFECTION THROUGH THE SKIN. SOURCES OF INFECTION.

1. Prof. Jules Courmont and Dr. A. Lesieur, Lyons: Transcutaneous Inoculation of Tuberculosis (in French).
2. Dr. Isidora Spitzstein, Budapest: Contribution to the Question of Percutaneous Infection (in German).
3. Dr. Julius Bartel, Vienna: Concerning the Opportunity for Tuberculous Infection by Dust from Public Places (in German).
4. Dr. William H. Park, New York: Sources of Tuberculous Infection.
5. Dr. J. Héricourt, Paris: Danger from Persons with Unrecognized Tuberculosis (Apparently Healthy Bacillus Carriers); Prophylaxis (in French).

6. Dr. Alfred F. Hess, New York: A Study of Tuberculous Contamination of New York City Milk.
7. Dr. C. André, Lyons: Flies as Agents of Dissemination of the Bacillus of Koch (in French).
8. Dr. J. Woods Price, Saranac Lake, N. Y.: The Possibilities of Infection from Table Utensils at Sanatoria.
9. Dr. S. Matejin, Budapest: Concerning Opportunities for Infection (in German).
10. Dr. S. Bernheim, Paris: Relations of Air to Tuberculous Contagion. Sterilization of Air (in French).

WEDNESDAY, SEPTEMBER 30, 2:30 P. M.

JOINT SESSION OF SECTIONS I AND VII. THE RELATIONS OF HUMAN AND BOVINE TUBERCULOSIS.

1. Prof. Theobald Smith, Boston: The Relations of Human and Animal Tuberculosis, with Especial Reference to the Question of the Transformation of Human and Other Types of the Tubercle Bacillus.
2. Prof. G. Sims Woodhead, Cambridge, England: The Problems to be Solved in Dealing with Human and Bovine Tuberculosis.
3. Prof. S. Arloing, Lyons: Relations of Human and Bovine Tuberculosis *(in French)*.
4. Prof. J. Fibiger and Prof. S. O. Jensen, Copenhagen: Human and Bovine Tuberculosis and the Tubercle Bacillus.
5. Dr. M. P. Ravenel, Madison, Wis.: Recent Developments in Regard to the Relations of Human and Bovine Tuberculosis.
6. Dr. Lydia Rabinowitsch, Berlin: Title to be announced.
7. Dr. R. M. Dinwiddie, Experiment Station, Ark.: The Susceptibility of Cattle to the Virus of Surgical Forms of Human Tuberculosis.
8. Dr. P. A. Lewis, Boston: Tuberculous Cervical Adenitis. A Study of the Tubercle Bacilli Cultivated from Fifteen Consecutive Cases.
9. Dr. Charles W. Duval, Montreal: Study of Tubercle Bacilli from the Tissues of Special Forms of Primary Cervical Adenitis in Man, with Particular Reference to Intermediate and Atypical Varieties of Bacilli.
10. Dr. William H. Park, New York: The Types of Tubercle Bacilli in Pulmonary Tuberculosis and Certain Other Forms of Tuberculosis in Human Beings. A Preliminary Report of Work Done by Drs. Woglom, Krumwiede and Montgomery.
11. Dr. J. N. Davalos and Dr. J. Cartaya, Havana: A Comparative Study of the Tubercle Bacillus of Human and Bovine Origin.

THURSDAY, OCTOBER 1, 9:30 A. M.

IMMUNITY.

1. Dr. E. R. Baldwin, Saranac Lake, N. Y.: The Problem of Immunity in Tuberculosis.
2. Prof. A Calmette and Dr. C. Guérin, Lille: Concerning Immunity *Against Tuberculosis (in French)*.
3. Dr. Julius Bartel, Vienna: Experimental Immunization Against Tuberculosis (in German).
4. Prof. Jules Courmont and Dr. A. Lesieur, Lyons: Contribution to Immunity in Tuberculosis (in French).
5. Prof. A. B. Marfan, Paris: Immunity of Man Against Tuberculosis (in French).
6. Dr. Gerald B. Webb, Dr. W. W. Williams, Colorado Springs, and Prof. M. A. Barber, University of Kansas: Immunity Production by Inoculation of Increasing Numbers of Living Bacteria, Beginning with One Organism.
7. Prof. A. Calmette, Lille: Tuberculins and the Measure of Their Activity (in French).
8. Dr. Camillo Calleja, Valladolid, Spain: Eupyrexia (in Spanish)

THURSDAY, OCTOBER 1, 2:30 P. M.

PROTEIDS OF THE TUBERCLE BACILLUS. IMMUNIZING SUBSTANCES. ENZYMES. CHEMICAL STUDIES.

1. Prof. Victor C. Vaughan, Ann Arbor, Mich.: A Study of the Proteids of the Tubercle Bacillus.
2. Dr H. Noguchi, New York: The Action of Soaps on the Vitality and Immunizing Property of the Tubercle Bacillus. (To be read by Dr. Simon Flexner.)
3. Dr. T. Ishigami, Osaka, Japan: Tuberculo-Toxoidin and Immunizing Serum.
4. Dr. Eugene L. Opie, New York: The Part of Enzymes in Tuberculous Lesions.
5. Dr. Paul Courmont, Lyons: Humoral Properties of Tuberculous Exudates; Prognostic and Therapeutic Value (in French).
6. Dr. Fernand Bezançon and Dr. S. I. de Jong, Paris: Histochemical and Cytologic Study of Tuberculous Sputum (in French).
7. Prof. J. Nicolas, Lyons: *Laboratory Aids in the Diagnosis of Cutaneous Tuberculosis (in French)*.
8. Dr. Alfred C. Croftan, Chicago: An Experimental and Clinical Study of the Calcium Metabolism in Tuberculosis.

FRIDAY, OCTOBER 2, 9:30 A. M.

PATHOLOGIC ANATOMY AND HISTOLOGY.

1. Prof. William T. Councilman, *Boston*: Some Considerations Concerning Lesions of Tuberculosis.
2. Prof. S. Arloing, Lyons: Tuberculous Infection According to the Pathologic Anatomic Criterion (in French).
3. Dr. Léon Bernard, Paris: *Anatomic and Pathologic Study of the Non-Follicular Lesions of Tuberculosis (in French)*.
4. Dr. James Miller, Birmingham, England: Histology of Pulmonary Tuberculosis, with Demonstration. Discussion by Prof. G. Sims Woodhead, Cambridge, *England*.
5. Prof. J. Paviot, Lyons: The Anatomic Process in the Initial Hemorrhage of Pulmonary Tuberculosis (in French).
6. Prof. R. Tripier, Lyons: Pneumonia in the Process of Pulmonary Tuberculosis (in French).
7. Prof. A. S. Warthin, Ann Arbor, Mich.: The Frequency of Healed Tuberculosis of the Mesenteric Glands, with Particular Reference to the Relationship Between Hyaline Deposits in These Glands and the Healing of Tuberculous Lesions.
8. Prof. J. George Adami and Dr. John McCrea, Montreal: Analysis of 1,000 Consecutive Autopsies in Montreal with Reference to the Incidence of Tuberculosis in the Different Organs
9. Dr. A. R. Landry, Montreal: Incidence of Chronic Pleurisy in 1,400 Consecutive Autopsies in Montreal and Its Relation to Tuberculosis. (To be read by Prof. Adami.)

FRIDAY, OCTOBER 2, 2:30 P. M.

PATHOLOGIC ANATOMY AND HISTOLOGY (Continued.)

1. Dr. Josef Kertesz, Budapest: The Histogenesis of Tubercle of Bone (in German).
2. Dr. Joseph Walsh, Philadelphia: The Kidneys in Tuberculosis of the Lungs.
3. Dr. D. J. McCarthy, Philadelphia: Tuberculosis of the Spinal Meninges, with a Consideration of the Mode of Infection of These Structures.
4. Prof. E. Boinet, Marseilles: *Tuberculosis and the Suprarenal Capsules (in French)*.
5. Dr. C. Esmonet, Châtel-Guyon, France: Experimental Studies of Tuberculosis of the Testicle (in French).
6. *Dr O Amrein, Arosa, Switzerland: Periostitis et Adipositis* Tuberculosa Toxica Multiplex.
7. Dr. Walter Altschul, Prague: The Pathology of Peritoneal Tuberculosis (in German).
8. *Dr. J. T. Ullom, Philadelphia: The Liver in Tuberculosis.*

FOREIGN.

Centennial of Medical Book Publishing Firm.—The firm of F. C. W. Vogel of Leipsic celebrated three years ago the one hundred and seventy-fifth anniversary of its foundation. It has recently celebrated the centennial of the assumption of the present firm name. It has long published a large number of important scientific periodicals, especially *Archives* and *Zeitschrifts*.

Medical Research on Prehistoric Material from the Nile Valley.—A cablegram from London states that the council of the Royal College of Surgeons has given permission to Dr. Elliot Smith and Dr. Wood Jones, of the Cairo Medical School, to carry out, in the museum of the college, an examination of a collection of mummies and parts of mummies found during excavations in the Upper Nile Valley. The material is representative of peoples inhabiting Nubia in ancient times, and is expected to throw light on their pathology and the results of their surgery. The Egyptian government has expressed its willingness to present the collection to the museum of the Royal College of Surgeons.

The Cholera Situation.—Late telegrams give alarming accounts of the spread of cholera in Russia. For the twenty-four hours beginning September 20, the Municipal Hospital, St. Petersburg, reported 380 cases with 155 deaths, and these did not include the number treated in the military and suburban hospitals for the same period. Dispatches received in St. Petersburg from three provinces report 488 new cases with 201 deaths in the last twenty-four hours, Rostov-on-the-Don furnishing 182 cases and 80 deaths.——The hospital situation is reported to be critical, as all hospitals are full and are turning away patients.——The government has threatened to *proclaim martial* law and the aldermanic council of St. Petersburg has appropriated $250,000 to enlarge hospital space and to purchase and distribute disinfectants and expedite the interment of the dead. Several public schools have been closed and their rooms transformed into hospital wards.——The official bulletin states that there were 349 cases and 128 deaths between noon, September 18 *and noon, September* 19, and from noon, September 19, to noon, September 20, 398 cases and 141 deaths.——Official notice in the last issue of the *Münchener medizinische Wochenschrift* states that from August 8 to 14, 538 cases of cholera were reported in Russia with 270 deaths, and for the week of August 15-21, 1,145 cases with 517 deaths.——The consul general at St. Petersburg, under date of August 22, reports that during the week ended August 14, 538 cases of cholera were reported, with 270 deaths.——Despite preventive measures, cholera has entered Odessa. On September 18, 20 cases were reported, with 7 deaths, and on September 19, 20 cases and 6 deaths.——The *St. Petersburg Medical Weekly* says in its issue of September 5, that between July 8 and August 15, 3,141 cases, with 1,505 deaths, occurred in Russia, the majority in Astrakhan, Nijni Novgorod, where the great annual fair is now in progress, having 142 cases.——*On account of the rapid spread of cholera* in Russia, Surgeon-General Wyman of the Public Health and Marine-Hospital Service is said to have sent to that country an officer, a cholera expert, who will be expected to make a study of the situation and advise the surgeon general, and also take such steps as may be deemed desirable to prevent the spread of the disease to the United States.——United States consuls at Libau, Hamburg, Bremen, Rotterdam, Antwerp, London, Liverpool, Southampton and Glasgow have been instructed to detain all Russian immigrants en route to the United States for five days when circumstances render it advisable.——The report of the municipal hospitals of St. Petersburg for September 22 shows 417 new cases and 117 deaths. There is now a total of 1.587 patients in the various hospitals. The incompleteness of the municipal statistics is shown by the fact that in one cemetery alone there were 424 interments during the last three days or within 20 of the total number of deaths reported.——France is extending precautions and has established an emergency station in addition to the elaborate disinfectant plants at the terminals of the Northern and Eastern railroads.

Public Health Reports for September 18 announce that at Hankow more than 200 deaths have occurred among the native population, and that 8 cases have occurred among foreigners, with 7 deaths.——At Hongkong 4 cases occurred during the week ended August 1, with 3 deaths.——The reports from Shanghai, dated August 17, say that Asiatic cholera now prevails to some extent among the natives along the water front.——The disease is reported at Amoy and Hankow, the latter furnishing about 6 victims a day, the total mortality reaching 1.860, among the fatal cases being a number of foreigners.——The disease is said to be prevalent at Su Chow, Wo Sech, Hang Chow, Ning Po, Nan Kin and other native cities.——Under date of August 22 and 24, cholera is reported at Kure, the naval station in the inland sea near Heroshima, Japan, where a vessel from Calcutta is in quarantine with 4 cases on board.

Telegraphic advice from Manila, September 21, reports that on the previous day two white persons were attacked by cholera. During the day 35 new cases were reported in the city. For the twenty-four hours ended at 8 a. m., September 21, 58 new cases of cholera and 19 deaths were reported in Manila.——Governor-General Smith has called a special meeting of the Philippine Commission to lay plans for the extension of the campaign against the disease.——Chief Quarantine Officer Heiser, Manila, reports under dates of July 27 and August 3, that during the week ended July 25, two cases of cholera were reported, with one death, and during the week ended August 1, 14 cases, with 11 deaths.——During the week ended July 18, 1.445 cases were reported from the infected provinces of Benguet, Bulacan, Capiz, Ilocos, Sur, Iloilo, Misamis, Nueva, Ecija Pampanga, Pangasinan, Tarlac, and Union, with 778 deaths. During the next week 1,048 cases were reported, with 637 deaths, and during the following week 1,004 cases, with 695 deaths.——For the twenty-four hours ended at 8 a. m., September 23, 36 new cases of cholera were reported, with 11 deaths, the smallest gain made by the disease for several days. No additional cases in Americans are reported and those now ill have good prospects for recovery.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Sept. 12, 1908.

The Health of the Army.

The report of Lieutenant-General Sir Alfred Keogh, director general of the Army Medical Department, shows that the health of the troops, at home and abroad, has been exceptionally good last year. The diminution in illness has been most marked in India and in Egypt. In the former country the hospital admission and death rate were the lowest on record. An enormous diminution in venereal disease is recorded. In 1897 the hospital admission rate was 507.8 per 1,000; in 1907 it had fallen to 89.9. As regards invaliding in India, during the past cold season the experiment was tried of sending men to the hills stations instead of invaliding them home, as was formerly the custom. The result has been most gratifying; the men improved markedly in these places, which possess an unrivalled climate in the winter. As a consequence, compared with the previous season, the number of invalids has decreased one-half. The improvement in the general health of the army is attributed to increased attention to sanitation. Prophylactic measures have been more generally adopted and sanitary details in barracks and camps more carefully attended to. The discovery that Malta fever is conveyed by the milk of goats has led almost to the extermination of the disease. A comparison with the latest figures of disease in other armies shows that in respect to all diseases the army of the United States heads the list, with an admission rate of 1,179 per 1,000, and this is followed by the armies of Austria, France and Germany in the order named, while the British army occupies the lowest place but one.

Tuberculozyne.

An inquest held at Southend on a boy, aged 11, the son of an Italian ice-cream vendor, shows once more the nostrum vendor as a greedy harpy, preying on the sick. A year ago the father took the boy to 6 Bouverie Street, London, the address of the exploiters of Tuberculozyne, which was advertised as follows: "Tuberculozyne, by its peculiar action, destroys the bacilli. Its properties are such as to resist the disease germs. Do not delay too long. Tuberculozyne, if taken in time, will cure you of consumption." The father expected to see a doctor, but only saw some of the office help, and the boy was not examined. For twelve months, up to the time of his death, he took the nostrum. The necropsy showed an old pleurisy and tuberculosis of both lungs and of the intestines. The police took possession of two bottles of Tuberculozyne in the patient's house. Dr. Bernard Dyer, the public analyst, examined them and found that they consisted for the greater part of a solution of glycerin, flavored with cinnamon in one case and some kind of almond flavoring in the other. According to the directions, they were to be taken mixed. One contained some potash compound and some compound of phosphates or phosphoric acid and was slightly alkaline. The other was slightly acid and contained minute traces of copper (about one fiftieth of a grain to the ounce). Medical evidence was given to the effect that the mixture would have no effect either to benefit or to injure the patient. The coroner, in reviewing the case, severely criticized the vendors. "When the father got into communication with them," he said, "they swamped him with 'literature' to induce him to undertake the treatment. He took the boy to London, expecting to see a doctor and saw only women clerks. He received two bottles of a useless mixture, for which he was charged $10 and for which he could ill afford to pay. My only object in holding this inquiry is that the public may have some information in regard to highly advertised quack medicines." In one of their letters to the father the vendors stated that "the cost of Tuberculozyne is very low, considering the nature of the ingredients and the expense of making it widely known." Exhibiting a large newspaper advertisement of the nostrum, the coroner observed that it was evident that "making it widely known" must cost a considerable sum of money. In reply to a question from a juror whether it would not be possible to prosecute the vendors, the coroner said that that was not a question for the jury, but for the police.

Plague in the Punjab.

The report on the sanitary administration of the Punjab for 1907, which has just been issued, is of unusual interest. It deals with a year in which the mortality is without parallel in this or any other province of India. The deaths from plague reached the appalling figure of 608,685, or 30.3 per 1,000, almost equal to the aggregate death rate from all other causes in the province and more than double the rate from all causes in England. The highest death rate from plague previously reported was 19.7 per 1,000 in 1904. Plague first broke out in the Punjab in the severe epidemic form in 1902, since which time the population has been almost decimated by it; the deaths in the six years which have elapsed amount to 1,808,415, or about 9 per cent. of the population. Fortunately the epidemic of the present year is of a very mild character. The mortality has been far higher in the rural districts than in the towns. The most striking fact in the epidemiology of plague is its apparent dependence on climatic variations, its disappearance when the temperature becomes very high and its reappearance when the temperature falls. How does the bacillus maintain its existence during the non-epidemic season? Its life in the soil has been found to be comparatively short, and plague in man is dependent on plague in rats. There is no reason to suppose that man harbors the bacillus after recovery, and although chronic plague does occur among rats, the development of acute plague from a chronically infected rat is thought hardly possible. The only obvious way in which plague can be maintained in the non-epidemic season is by a chain of acute cases among rats. In the cities of Calcutta and Bombay, and in different areas in the widely infected provinces, plague occurs in man throughout the year. It follows that acute plague in rats must occur throughout the non-epidemic season. As the mildness of the epidemic of 1905-06 did not indicate an approaching cessation it can not be argued that the great decline of the present year indicates any hope of cessation. The government are taking active measures of the usual kind, but the attitude of the people toward them remains hostile. They endure the epidemic with their usual fortitude, but will not avail themselves of inoculation or evacuate their dwellings.

The Study of Tropical Medicine in Liverpool.

For a considerable time the teachers of the Liverpool School of Tropical Medicine have reported to the committee that the time allotted for the course of instruction—ten weeks—is insufficient, especially as recent numerous advances have much enlarged our knowledge of tropical medicine. The school has determined, therefore, to add three weeks to the period of study. Owing to this lengthened term it will not be possible to give more than two courses in the year. These will begin on January 6 and September 15. Another innovation has been introduced—a course lasting one month, of practical instruction in tropical pathology and medical entomology. This will be given in June. It is hoped that it will be of great use to physicians returning on short leave to England, as it will enable them to acquire the technic of microscopic and laboratory work which has been much desired by many.

Irish Vital Statistics.

The annual report of the registrar general for Ireland shows that in 1907 the marriage rate was 5.14 per 1,000, a decrease of 0.02 as compared with the year 1906 but 0.05 above the average rate for the last ten years. The birth rate was 23.2, the same as the average for the last ten years. The death rate was 17.7, or 0.7 above the rate for the preceding year, but 0.2 under the average for the preceding ten years. The excess of births over deaths was 24,408 but the loss by emigration amounted to 39,082, which exceeded the average for the last ten years (37,381). As usual Ireland maintains its reputation as a land of centenarians. No fewer than 700 persons died whose ages were stated to be over 95, and 145 were reported as over 100. In the absence of public records for remote periods verification of the ages of very old persons is not possible, but secondary inquiries were made and showed that the ages were correct as far as could be ascertained. The most ominous feature of the report is the death rate from tuberculosis, which shows no diminution and amounts to 15 per cent. of the deaths from all causes. Nearly all the deaths from this disease occurred between the ages of 25 and 35.

Fat Men Barred as Divers.

The recent investigations of Mr. Leonard Hill have shown that fat men are more liable to caisson disease than thin ones, because adipose tissue is very absorbent of the nitrogen of the air, the liberation of bubbles of which in the body produces the symptoms. The same conclusion, of course, applies to divers or others exposed to increased atmospheric pressure. The admiralty has, therefore, laid down the following rules for the royal navy. From candidates for seaman diver and artificer diver only those who have not a tendency to fat are to be accepted, preference being given to men who are distinctly thin. In the case of men who have already qualified for divers all those who may be classed as fat are on no account to be employed in diving. Men who are inclined to fatness, but not to such an extent as in the opinion of the medical officer to disqualify them for work at the lesser depths, may continue operations in depths not exceeding 12 fathoms (72 feet). In all diving operations at 20 fathoms (120 feet) and over men of the sparest habit are to be selected from the available divers.

PARIS LETTER.

(From Our Regular Correspondent.)

Paris, France, Sept. 2, 1908.

School Hygiene.

The application of the experimental method of psychology has profoundly modified our ideas on pedagogy. As this evolution from an abstract to an applied science advances, the important rôle that the physician is called on to play in the work becomes more and more apparent. The special knowledge of the physician enables him to solve, better than any one else, the difficult problems in the education of youth. This rôle of the physician has too long been underrated in France. Up to the present the medical inspection of schools has been very defective and, indeed, it scarcely exists except in a few large cities.

About six years ago a private society, which is now known as the ‘French League for School Hygiene,” was founded by the initiative of Dr. Albert Mathieu. At present it includes among its 1,300 members about 400 teachers and professors.

The purposes of the league are: 1, to call attention to the disadvantages for growing children of the present organization of the schools; 2, to secure for children the judiciously planned physical exercise and open air life which are so important for the welfare of the young; 3, to reform educational programs and methods so as to avoid mental overwork and waste of intellectual energy, and, 4, to demand for physicians and for fathers of families a more effective share in the regulation of the physical and intellectual life of pupils. The league has local branches which work to secure from the public authorities and from the heads of private schools the necessary improvements in school hygiene.

Being a society for propaganda as well as for study and for action, the league has twice organized national congresses of school hygiene at Paris, and is now preparing for an international congress[1] the third of its kind, to be held in Paris in the spring of 1910.

For two years the league has been holding at Paris a series of medical pedagogic conferences which have been very well attended. The subjects of some of the conferences which will be held next winter are as follows: The relations of medicine and pedagogy, classes for abnormal children; the prophylaxis of criminality by educational selection; sexual morality in school; instruction in sexual physiology at school; prophylaxis of venereal diseases at school; the maladies of growth, etc.

It is certainly under the influence of the propaganda carried on by the league that the minister of public instruction has decided to take measures looking to the care of the mouths of school children.

These measures comprise the organization of services of dental inspection and of dental treatment and instruction in regard to the care to be taken of the mouth. The service of inspection of the teeth is to be entrusted to a graduate of a dental school. The teeth of all pupils will be examined by this specialist twice a year, and the result of the examination will be recorded on a special memorandum, which will be preserved by the head of the school. The expense of the service of dental treatment will fall on the families, like the expenses of illness.

It will be easy, however, for the heads of schools situated in or near the large cities to secure for their pupils the services of the dentists in the clinics connected with the dental schools. Everywhere, moreover, lacking a dentist chosen by the parents, the service of dental treatment, organized outside the school, will be entrusted to a graduate of a dental school chosen, like the dental inspector, by the administration on recommendation of the head of the school, and to be paid in accordance with a scale previously fixed in each locality by agreement with the families. The dental inspector and the dental practitioner will never, however, be united in the same person, since the former is to keep check on the latter by means of a record in regard to the teeth treated and the work done, which the dental practitioner will fill out at each operation. This record will be returned to the school and compared by the dental inspector with his own records.

These measures will apply, not to primary schools alone, but also to the lycées, or grammar schools, and the high schools for boys and girls. At the Michelet School in Paris the two services of dental inspection and of dental treatment will begin with the opening term.

At the same school a fumigating apparatus for the disinfection of books has just been installed, in which all the books belonging to pupils who have had infectious diseases will be submitted to the fumes of formaldehyd. During the summer vacation all books lent to pupils during the course of the school year will be disinfected.

BERLIN LETTER.

(From Our Regular Correspondent.)

Berlin, Aug. 29, 1908.

The Koch Antituberculosis Fund.

Until comparatively recently, wealthy people in Germany have not been inclined to make large endowments for philanthropic and especially for scientific purposes. It is only since the national wealth of the Germans has been increasing in the last few decades that the example of philanthropists in America, Russia, England and other countries has acted as a stimulus to our wealthy countrymen, but, of late, foundations for the promotion of the general welfare are increasing from year to year in the most gratifying way. It is true that we can not show such large endowments as have been made now and then in your country, as we do not have the multimillionaires who are found in your enviable country in not inconsiderable number. Perhaps, however, the number of endowments made yearly may, to a certain extent, compensate for the amounts of the single gifts; in the course of the last decade alone, several millions have been devoted to general beneficence.

In many cases the possibility of obtaining distinctions from the government in the shape of titles and orders or even the elevation to the nobility may act as a powerful stimulus to the endowment of charity, and in this respect our emperor has without doubt done a very encouraging work. But, aside from these motives, there is the influence of the humanitarian trend which has seized the entire world, and especially the German people, leading men of means to devote a portion of their wealth to the general good without reference to earthly reward.

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[1] Previously referred to in The Journal, Aug. 15, 1908, p. 612.

Last year a new foundation was established which, on account of its purpose and of the man to whom it is dedicated, should enlist the special interest of the entire medical profession. This is the Robert Koch Endowment Fund for the Fight against Tuberculosis—*Die Robert Koch-Stiftung zur Bekämpfung der Tuberkulose*

The first suggestion for this foundation came from Prof. Schwalbe, the editor of the *Deutsche medizinische Wochenschrift*, who took advantage of the occasion of the twenty-fifth anniversary of the discovery of the tubercle bacillus, March 24, 1908, to issue an appeal for the collection of this Koch endowment fund. The editor of this well-known medical journal had an especial justification for his action in the fact, which may be well known to you, that with few exceptions Robert Koch has published his entire work in the *Deutsche medizinische Wochenschrift*, so that his journal is to a certain extent Robert Koch's "organ."

The plan received immediately the cordial support of the highest authorities and of the profession, and in less than a year it proved possible to realize the goal set by the committee. To date the subscriptions to the fund have already exceeded a million marks ($240,000). To be sure, your great philanthropic countryman, Andrew Carnegie, contributed nearly half of the sum in response to an appeal from the first court physician on the occasion of a visit of Carnegie to the emperor at Kiel. The emperor has given the next highest contribution, 100,000 marks ($24,000); the remainder has come from manufacturers and physicians, not only in Germany, but in many other countries, and other classes of the population have participated in the endowment.

The object of the foundation is the encouragement of scientific investigations to aid the campaign against tuberculosis. The board of directors of the foundation consists of 11 members: 1, Robert Koch himself; 2, a member named by the emperor; 3, the president of the imperial health office; 4, the director of the institute for infectious diseases; 5, a representative of the German central committee for the campaign against tuberculosis; 6, a representative of the imperial committee for medical postgraduate instruction; 7, a representative of the *Aerztevereinsbund*, a national German medical association, and four members selected by the board of directors. As honorary members such persons can be appointed as have been especially instrumental in promoting the purposes of the institution. (As I hear, it is proposed to elect Carnegie an honorary member.) The management has at its disposal for the purposes of the foundation the interest on the endowment fund and special donations.

Possibly the foundation may receive attention in America at the International Congress on Tuberculosis, which will certainly gain an especial attraction by the presence of Robert Koch. The most satisfactory recognition will, of course, be by gifts of money.

Pharmacology

Tuberculozyne.

Our London correspondent refers[1] to a coroner's inquest recently held in England on a boy who died while taking the nostrum Tuberculozyne. This cruel fake is a product of this country—for which we should blush—being put on the market by "Dr." Derk P. Yonkerman of Kalamazoo, Mich. It was exposed by Dr. Kebler in The Journal[2] about two years ago. Later Samuel Hopkins Adams in *Collier's*[3] paid his respects to it and its exploiter, and last year the *Sydney* (N. S. W.) *Bulletin*[4] had the following to say regarding the nostrum:

> "The blastiferous 'Tuberculozyne' seems to be a mixture of many things and whether a patient strikes one bottle or the other there appears every reason to consider that he is a swindled consumptive. Possibly the hash is harmless—the *Bulletin* does not know—but a harmless mixture may amount to the cold-blooded murder of a consumptive just as much as a keg of prussic acid. A patient who is capable of being cured under proper treatment may waste his time over the bottles of rubbish manufactured by shameless and grasping quacks till he becomes incurable, and in that case the quack has killed him just as much as if he beheaded him with an axe. In this case the bottled slush was manufactured by a Yankee person or company and imported here in drums (carboys)."

An analysis of the nostrum and its method of exploitation was published in the *British Medical Journal*[5] recently. This analysis compared with those published in The Journal two years ago, those made in Sydney, N. S. W., and others made by the public analyst for the coroner in the case described, show that like most remedies of that ilk—from antikamnia to peruna—one is never sure how long the "formula" will remain stationary.

It is to be hoped that more coroners on both sides of the Atlantic will force inquiries in cases of death occurring in patients who are taking these "sure cures." The awakening on the part of the British public to the worthlessness and danger of nostrums of the type of Tuberculozyne will indirectly help to abolish the Great American Fraud. It has become increasingly common since the American public has been aroused to the viciousness of "patent medicines" for the promoters of such to seek new victims in other English-speaking nations. Object lessons such as coroners' inquests will inevitably tend to eliminate those human scavengers who wring money from the incurably sick under the guise of "cure."

Correspondence

Marital Tuberculosis Infection.

Topeka, Kan., Sept. 9, 1908.

To the Editor:—In your editorial on "Marital Infection in Tuberculosis," in The Journal, September 5, you say: "At present it would seem to be fairly well established . . . that consumption is not actively contagious between husband and wife, and that a certain previous constitutional condition or predisposition is essential for its contagion to act in any case."

The experience and observation of a fairly long professional life fully confirm your conclusions. I know the nostrum vendors prove what they will by experience, by noting only what confirms. While I have never known an instance in which husband and wife contracted tuberculosis from this closest of human relationships, I have known many instances in which they did not, and give you one of exceptionally marked character.

Z. V., a pioneer in the Miami Valley, Ohio, who early fell a victim to the drink habit, married a healthy and vigorous woman; to them were born three sons and three daughters. Two of the sons contracted the drink habit, and two of the daughters died of pulmonary tuberculosis. The other daughter was married to a strong and healthy farmer of good heredity. Soon after the birth of their eleventh child the father died of congestive remittent fever. The youngest daughter died at the age of 19, of consumption. All the other children married healthy husbands and wives. The husband of the oldest daughter died early of fever, and after a number of years the widow married again, and died of consumption, leaving a healthy husband to die of old age. Her three sisters, dying of consumption, left healthy husbands, two of them marrying a second time and dying practically of old age, the other dying of fever at Burlington, Iowa. Of the sons, two escaped tuberculosis, two died of that disease, and two of alcoholism, contracted in the early fifties, when alcohol was supposed to cure consumption, and so it often did, by virtue of one dread destroyer outrunning another. The sons all left healthy widows, and the mother nursed all her children during their last illnesses, and died of old age.

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1. London Letter, this issue, p. 1093.
2. Nov. 10, 1906, p. 1549.
3. The Great American Fraud, 4th Ed., p. 73.
4. Report of the Royal Commission, Australia, i, 1907.
5. Aug. 22, 1905, 505.

If tuberculosis is contagious, the contagion is of a widely different character from that of variola, rubeola, and allied diseases. As it is one of the great destroyers of mankind, though rarely developing in a vigorous life, the problem with the profession would seem to be how to secure and sustain such a life, and so prevent the development of the starving tuberculous cell. W. L. Schenck, A.M., M.D.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

PRESCRIPTION WRITING.

————, Sept. 17, 1908.

To the Editor:—Will you kindly give the correct use of the word "ad" in prescription writing? If, after indicating the amount of basis, adjuvant, etc., the name of vehicle is followed by "ad" with the number of ounces indicated, shall the whole amount of prescription be brought to this amount or shall this amount of the vehicle be added? Does the use of q. s. preceding or following the word "ad" change its significance? There seems to be some confusion in regard to the matter; some claiming that "ad" is synonymous with add. G L. N

Answer.—The use of "*ad*," in the connection above given, means that the immediately preceding ingredient is to be added until the entire bulk of the mixture is brought up to the amount specified. "*Ad*" is simply Latin for "to" or "up to," and has nothing to do (save in a remote philological connection with which we are not here concerned) with the English word "add" The addition of the letters "*q. s.*" (*quantum sufficiat*) would effect no change in the sense, for their significance is there, whether written or not; but it would alter the grammatical construction of the entire phrase by requiring the name of the ingredient to which *quantum sufficiat* refers, to be put in the genitive case of quantity (as is done with the other ingredients) instead of in the accusative as the direct object of the verb "take." In Latin we say "*Recipe acidi hydrochlorici diluti drachmam unam*," where in ordinary English we should invert the order and say "take one dram of hydrochloric acid." What do we take? One dram. One dram of what? Of hydrochloric acid. In the last instance, however, the idea is different. "*Recipe aquam ad uncias sex*." What do we take? Water. How much water? (Enough to make) up to six ounces If, however, we give expression to the "enough to make," by "*q. s.*," then "*q s.*" corresponds, as the direct object of *recipe*, to the specified amounts of the other ingredients and requires a genitive of the thing measured to qualify it. Hence we should have: *Recipe aquæ, quantum sufficiat ad uncias sex.*

The above points are, of course, elementary, both in Latin and in prescription writing. It is only consistent, however, to answer the question rather fully, in view of the criticism that has been made so often, both by The Journal and by many members of the medical profession, that there is a marked lack of thoroughness in the teaching of prescription writing in medical colleges.

LITERATURE ON CYSTITIS.

Eckerty, Ind., Sept. 12, 1908.

To the Editor:—Please give references to articles on cystitis that have appeared in The Journal. J. E. Saalman.

Answer.—The following original articles and abstracts have appeared in The Journal:

Prather, S. S.: Cystitis, *Am. Pract. and News*, May, 1905; abstracted in The Journal, May 27, 1905, *p.* 1716.

Gersuny, R.: Improved Catheter to Prevent Cystitis, *Zentralbl. für Gynäkol.*, xxx, No. 1; abstracted in The Journal, March 17, 1906, p. 840.

Norris, C. C.: Two Rare Forms of Cystitis, *American Medicine*, March 31, 1906; abstracted in The Journal, April 14, 1906, p. 1139.

Sellei, J.: Treatment of Cystitis with Alcohol, *Berlin. klin. Wchnschr.*, lxiii, No. 45; abstracted in The Journal, Jan. 19, 1907, p. 270.

Hunner, G. L.: The Tub Treatment of Cystitis, The Journal Dec. 21, 1907, p. 2066.

Pedersen, V. C.: Treatment and Prognosis of Suppurative Cystitis, reported in Society Proceedings, The Journal, Feb. 22, 1908, p. 639.

Reference may be made to the Department of Therapeutics in The Journal, Aug. 5, 1905, p. 420, and Sept. 8, 1906, p. 804.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Sept. 19, 1908:

Kilbourne, E. D., capt., relieved from duty at Fort Brady, Mich., to take effect at such time as will enable him to comply with order, and will proceed to San Francisco, and take transport sailing for Manila, Nov. 5, 1908, and on arrival to report to the commanding general for assignment to duty.

Bailey, Edward, M. R. C., ordered to active duty in the service of the United States, and is assigned to duty at Fort George Wright, Washington.

Jones, G. B., M. R. C., relieved from duty at Fort George Wright, Wash., and ordered to Fort Benjamin Harrison, Ind.

Dade, W. H., M. R. C., granted leave of absence for two months and fifteen days.

Bruns, E. H., first lieut., relieved from further duty at Fort Monroe, Va., and ordered to proceed to Fort Bayard, N. M., and report in person to the commanding officer of the General Hospital for duty.

Winter, F. A., maj., and Bally, H. H., capt., appointed members of a board of officers to meet at the Army Dispensary, Washington, Sept. 22, 1908, and on such other dates as may be necessary for the purpose of conducting the physical examinations prescribed in G. O. 79, War Dept., May 14, 1908, of such field officers as may be ordered before it.

Ford, J. H., and Duncan, L. C., capts., appointed members of a board of medical officers to meet at Ft. Wm. H. Harrison, Mont., for the examination of such officers of the Medical Reserve Corps, as may be brought before it to determine their fitness for retention in service.

Halliday, F. A., first lieut., retired from active service, Sept. 13, 1908.

Quinton, W. W., capt., granted 30 days' sick leave.

Peed, G P., capt., relieved from duty at Fort Ontario, N. Y., and ordered to Fort Monroe, Va., for duty.

Culler, R. M., capt., relieved from duty at Ft. Monroe, Va., and ordered to Fort Ontario, N. Y., for duty, instead of Ft. Logan H. Roots, Ark., as heretofore ordered.

Schmitter, Ferdinand, first lieut., ordered to Ft. Logan H. Roots, Ark., for duty.

Halliday, C. H., M. R. C., relieved from duty at Ft. Sam Houston, Tex., and ordered to Fort Fremont, S. C., for duty.

Cutliffe, W. O., M. R. C., ordered to Ft. McIntosh, Tex., for duty.

Guittard, A. M., cont. surg., ordered to proceed to his home, Alliance, Ohio, and on arrival to report to the Surg. Gen. for annulment of contract.

Lynch, Charles, major.; Delaney, M. A., and Siler, J. F., capts., detailed to act as judges at the third annual contest of the First Aid Corps of the Penn. Coal Co., and the Hillside Coal & Iron Co., to be held on Saturday, Oct. 3, 1908, at Inkerman, near Scranton, Pa.

Woodbury, F. T., capt., leave of absence extended 15 days.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Sept. 19, 1908:

Old, E. H. H., asst.-surgeon, ordered to duty at the Naval Hospital, Norfolk, Va., September 15.

Dollard, H. L., asst.-surgeon, detached from the *Rhode Island* and ordered to the *Albatross*.

Hart, G. G., acting asst.-surgeon, detached from the *Albatross* and ordered home to wait orders.

Marsteller, E. H., surg., transferred to the retired list from Sept. 15, 1908, on his own application after completion of 30 years' service, in accordance with a provision of the naval appropriation act of May 13, 1908; detached from the Naval Recruiting Station, Baltimore, Sept. 15, and ordered home.

Wells, H., medical director, detached from the Naval Recruiting Station, New York, and ordered to the Navy Yard, Portsmouth, N. H., and to additional duty in command of the Naval Hospital at that yard.

Bogert, E. S., surgeon, detached from the Naval War College, Newport, R. I., and ordered to the Naval Recruiting Station, New York.

Hoen, W. S., P. A. surgeon, detached from duty as assistant to the Inspector in charge of the Third Lighthouse district, Tompkinsville, N. Y., and ordered to the Naval Hospital, New York, for treatment.

May, H. A., P. A. surgeon, detached from the Naval Hospital, Norfolk, Va., and ordered to duty with lighthouse vesels en route to the Pacific Coast.

Reed, E. U., asst.-surg., detached from the Navy Yard, Mare Island, Cal., and ordered to the Naval Training Station, San Francisco.

Murphy, J. A., surgeon, ordered to temporary duty on board the *Franklin*.

McCormick, A. M. D., surgeon, detached from the Naval Academy, and ordered to the Naval Recruiting Station, Baltimore.

Bishop, L. W., P. A. surgeon, ordered to duty at the Naval Hospital, New York.

Foster, T. G., asst.-surgeon, detached from the Naval Training Station, Newport, R. I., and ordered to the Naval Hospital, Newport, R. I.

MacKenzie, E. G., and Sterne, C. F., asst.-surgeons, detached from the Naval Hospital, New York, and ordered to course of instruction at the Naval Medical School, Washington, D. C., October 1.

Phelps, J. R., asst.-surgeon, detached from the Naval Hospital, Boston, and ordered to course of instruction at the Naval Medical School, Washington, D. C., October 1.

Henry, R. B., and Giltner, H. A., asst.-surgeons, appointed assistant surgeons from Sept. 10, 1908.

McMurdo, H. B., acting asst.-surgeon, detached from the Naval Training Station, San Francisco, and ordered to course of instruction at the Naval Medical School, Washington, D. C.

Whitside, L. C., acting asst.-surgeon, detached from duty at the Naval Hospital, Newport, R. I., and ordered to course of instruction at the Naval Medical School, Washington, D. C., October 1.

Book Notices

Uric Acid as a Factor in the Causation of Disease. By Alexander Haig, M.A., M.D., Oxon, F.R.C.P. Physician to the Metropolitan Hospital and the Royal Hospital for Children and Women. Seventh Edition. Pp. 940 with 75 Illustrations. Price, $4.00. Philadelphia: P. Blakiston's Son & Co., 1908.

Probably no book has exercised a wider influence or produced a deeper impression on the minds of English-speaking physicians than Haig's work on "Uric Acid in the Causation of Disease." It is safe to say that a good share of the present generation of physicians have formed their conceptions of disease and have conducted its treatment under the influence of the ideas set forth in the former editions of this book. Its influence has extended even to the laity, so that it is not uncommon for the intelligent patient to assist the physician to a diagnosis by suggesting that it may be uric acid in his blood.

Two problems are presented by the book: 1, What is the secret of its immense influence, and 2, why does it continue to exercise this influence in spite of the fact that the theories of Haig have been largely repudiated by the scientific world? The first query finds its answer largely in the style and character of the book and largely also in the nature of its theme. It is an attractive idea to build up a theory that shall simplify the causation and likewise the treatment of disease by referring all forms to one cause. Osteopathy, Christian science, and other fads owe much of their popularity to the fact that they attempt thus to simplify the problem of the causation of disease. An inspection of the index of Haig's book will show how thoroughly he has attempted to bring the various forms of disease under the dominion of uric acid. The ingenuity with which his theory is fitted to the exigencies of the different ailments of mankind is indeed remarkable. The book appears to have immense practical as well as scientific value. If the theory is true, the numerous practical suggestions scattered through its pages make it a mine of therapeutic wealth. The so called facts of experiment and experience with which its pages are filled would render it an epoch-making contribution to science. The author has collated observations and recorded experiments on the relations of uric acid with as great diligence as Darwin collected and classified the facts of biology before announcing his theory of evolution. It is small wonder then that medical men seeking for uniformity and general principles amid the puzzling facts and theories of pathology and therapeutics should have welcomed a book that promised to lead them to the desired goal along so clear a path. Further, we must credit the author with a fascinating and pleasing style. So much may be said in explanation of the immense vogue which the book attained when first published.

But the second question is more difficult to answer. It is probably known to most physicians who have followed the advance of investigation that the ideas and theories of Haig have been long discredited and disproved. Why, then, do they still maintain their hold on a large proportion of our profession? The analytic methods of Haig were early shown to be unreliable, the central proposition on which he relies, viz., that there is a normal fixed ratio between urea and uric acid, was disproved as much as ten years ago, and yet he still propounds it with confidence and evidently expects that the profession will accept his conclusions.

Haig, having begun with the assumption that uric acid had some relation to headache, was soon puzzled by the fact that "while there might be a bad headache one day, with say, an excretion of 16 grains in the twenty-four hours, an exactly similar excretion might occur on another day without any headache." Nothing daunted, he sought for an explanation, which he found in an assumed abnormal relation of uric acid to urea on the day on which the headache occurred. The supposed fixed relation of uric acid to urea (a theory long since exploded) is the first false premise on which the imposing structure of Haig's uric acid theory is based.

The character of facts relied on to support his assumptions is shown on page 16, where he estimates the amount of uric acid stored in the body from the amount found in various organs, arriving at the conclusions that the body contains about 300 grains. He then estimates with great exactitude the amount excreted for 3,161 days. Such imposing figures indicate a patience in scientific research that is commendable, but the results must be put down as mere guesswork. The guesswork character of these figures becomes more apparent when we consider that the method used by Haig is not an exact one. On page 18 we meet another theory propounded by Garrod and accepted by Haig, which is discarded by modern physiologists, viz., the theory that uric acid is formed in the kidney. Then for several pages of suppositions he explains how the uric acid on the headache day could not all have been formed in the kidney, since the proportion to urea would not allow of so much, but it must have come from some point at which it had been retained in the body.

The next false statement in this remarkable collection of errors is that acidity controls excretion of uric acid (p. 20). The view that alkalies increase uric acid excretion is again advocated on page 38. This statement, if made two decades ago, would have been pardonable, but with the advance of investigation it has been shown to be erroneous and ought not to appear in a book published at the present day.

On page 43 we meet the careless statement that glycocoll is a constituent of uric acid, and again on page 45 he says that the removal of glycocoll from the body is equivalent to the removal of uric acid. We learn (p. 47) that the effects of belladonna and opium are due to their action on uric acid secretion. On page 51 occurs the astounding statement that alkaloids increase uric acid in proportion to their xanthin elements. The presence of xanthin in alkaloids will be a surprise to most chemists, and the amount of uric acid produced from a grain of strychnin would not be very noticeable considering that the alkaloid is not by any means all decomposed in the body. Another remarkable statement occurs on page 21 and is formulated as a law, that "urinary water varies hourly and daily inversely with the excretion of uric acid or with the height of uric acid above urea." From this the author expands his theory until we find that uric acid controls the secretions, the blood pressure, the action of the capillaries, and the metabolism of the whole body.

The relation of uric acid to disease is a much discussed problem. With the prevailing uncertainty as to the normal metabolism the more careful investigators have been unable to find any evidence of its pathogenic action except in gout. Haig is troubled by no such scruples. He divides diseased conditions into two groups, apparently including the entire nosology and enumerates over a hundred affections which owe their origin, not solely, but principally, to this one substance. The two groups he sums up as gout and collemia. If one does not find a disease under one head he is pretty sure to hit it under the other. "Gout is relieved by solvents: collemia by retentives. Both are prevented, relieved or cured by a uric-acid-free diet. Gout is accompanied by quick circulation, raised temperature and few granules in the blood. Collemia is accompanied by slow circulation, subnormal temperature and many granules in the blood. This epitomizes the subject." Surely this simplifies pathology beyond the desire of the most indolent student.

It would be easy to fill many pages with demonstrations of the errors and inconsistencies of the book. Enough has been said, however, to show that while it may have once received attention as presenting plausible theories, the basis on which these theories are built is erroneous and superstructure worthless. This being the case, the question as to the continued popularity of the work is still more difficult of answer. We may attribute part of its popularity to the conservatism of physicians who hesitate to abandon old views and fail to keep abreast of scientific progress. It is to be hoped that the better education in chemistry of the coming generation of doctors will make impossible the acceptance of such untenable theories. How far the activity of proprietary interests has been efficient in keeping alive the theories of Haig is a question of interest, and if such influence has been considerable, as we believe it has, its lesson ought to put the medical man on his guard as to the source from which he derives his science as well as that of his remedies.

The Pathology of the Eye. By J. Herbert Parsons, B.S., D.Sc. (Lond.), F.R.C.S. (Eng.), Assistant Surgeon, Royal London (Moorfields) Ophthalmic Hospital. Vol. IV, General Pathology. Part II. Cloth. Illustrated. Price, $3.50. New York: G. P. Putnam's Sons, 1908.

This is the latest of the series of works on the pathology of the eye by Mr. Parsons. On the whole it is even a better example of original work, patient compilation and practical application of laboratory study than his previous contributions to the same subject. Seven chapters treat of "Injuries of the Eye," "Exophthalmos and Enophthalmos," "Panophthalmitis, Orbital Cellulitis and Thrombosis," "Sympathetic Ophthalmia," "Symptomatic Diseases of the Eye" and "Heredity."

One of the most satisfactory chapters is that on "Migratory Ophthalmia." After a careful analysis of all the theories of its pathogenesis, Parsons is of the opinion that bacterial transmission by metastasis, first mentioned by Mackenzie and elaborated by Berlin, is worthy of acceptance. He believes that most of the facts point to sympathetic ophthalmia as a disease of bacterial origin, and "if the virulence of the organisms and the varying conditions of resistance of the tissues are taken into account the variations in latent period and many other difficulties are abolished." Parsons thinks that the organism is pathogenic only for the eye and is innocuous to other parts of the body. He points out that in leprosy and tubercle their characteristic organisms set up a metastatic inflammation that, though subacute or chronic, is yet not purulent. Even virulent organisms may circulate in the blood and be harmless until they reach an organ or tissue for which they are pathogenic. For example, saprophytes, reaching the eye by way of the blood current, may set up serious ocular inflammation, although they do not affect other organs of the body through which the same infected blood flows. Parsons restates this idea of blood transmission when he says that the "fact that sympathetic ophthalmia manifests itself as a uveitis both in the exciting and sympathizing eye points to the same *causa causans.* The organism multiplies in the exciting eye; if this is removed early infection does not occur, but if organisms have escaped in quantity into the circulation sympathetic ophthalmia may follow."

That rather odd lesion "hole" in the macular retina, first described by Knapp in 1869, may be due to disease as well as to trauma. In almost all instances it is preceded by edema of the macular region, as de Schweinitz and others have pointed out. In all probability this edematous condition is followed by atrophy and slow perforation and is not necessarily due to injury, though a contusion of the globe or any injury to the orbital region may precipitate the final result.

Parsons refers to the appearance of lipemia in some cases of diabetes mellitus. The ophthalmoscopic appearances are very striking, as the retinal vessels contain a fluid which looks like milk—a condition which Uhthoff believes to be due to the arrangement of fat globules next the vascular wall, the red corpuscles remaining in midstream.

Parsons thinks that the main difference between diabetic and albuminuric retinitis lies in the absence of ophthalmoscopic changes in the arterial walls and of the absence of papillitis in diabetes—alterations so commonly observed in renal retinitis.

Health and Happiness. By Robert Maxwell Harbin, A.B., M.D. Cloth. Pp. 184. Price, $1.20. Philadelphia: Griffith & Rowland Press, 1908.

This book partakes of the character of a sermon to scientists in general and physicians in particular. Its platform may be best stated in the following words from Dr. Harbin's argumentum: "It is endeavored to produce an argument for the identities of the physical, intellectual and spiritual natures, respectively, and their relations to the Infinite Material Universe and Infinite Moral Universe. Health relates to the former, while happiness belongs to the latter realm. Science has to do with the material, while religion concerns the moral sphere. Infraction of the laws of Nature brings disease, while violation of the moral law brings unhappiness. While health has some bearing on happiness, there is no necessary causative relation between the two, for there may be happiness without health and *vice versa,* and it is not within the purpose of this discussion to refer to that phase of the subject." The argument unfolds Dr. Harbin's position, as outlined above, fairly well, but its convincingness will depend on the mental attitude of the reader. Those, however, who are interested in the study of these problems, from whatever viewpoint, may derive pleasure from it; at least it contains nothing likely to offend anyone, unless it be the blank materialist. The Argument is followed by chapters on "The Influence of Nature in Disease as Revealed by Recent Investigations," "Physiology of the Soul," "The Analogy of Disease and Sin," and "The Philosophy of Death." The style is somewhat jerky and syncopated, and in places is lacking in lucidity from inattention to the requirements of grammatical connection. Moreover, some of the scientific statements are deficient in accuracy, as when the author says that "the physiologist . . . can not distinguish a red blood corpuscle of an animal from that of the human organism."

Cataract Extraction. A Series of Papers with Discussion and Comments Read Before the Ophthalmological Section of the New York Academy of Medicine, 1907-1908. Edited by J. Herbert Claiborne, M.D., Instructor in Ophthalmology Cornell University Medical College. Cloth. Pp 169. Price, $2.00. New York: William Wood & Co., 1908.

This work is a valuable symposium on cataract, although the title is "Cataract Extraction." The individual papers have been contributed by men chosen for their peculiar fitness to treat the particular subject assigned to them and the whole has been most ably edited by Dr. Claiborne, who has added many valuable data from his own personal experience. Briefly, the subjects considered are: stage of development of cataract most suitable for extraction; preparation of patient and instruments; combined extraction; extraction with keratome; after-treatment; technic and indications for discission of secondary cataract; extraction in capsule; maturation operations; extraction of high myopia; final results of cataract extraction. These papers have been compiled with full discussions and may be said to cover the subject of cataract in full to date. One notable point is that in all the papers and discussions Herman Knapp of New York is the only one who mentions irrigation of the anterior chamber after cataract extraction.

Medical Greek. By Achilles Rose. Cloth. Pp. 262. Price, $1.00. New York: Peri Hellados Publication Office.

This book is a republication of a series of papers advocating accuracy according to the genius of the Greek language in the formation of medical terms from the Greek. To attain this end Rose insists that we can not ignore the work in nomenclature by modern Greek physicians, among whom are to be found, he says, excellent philologists, versed in both the ancient and the modern Greek. The book contains chapters, among other things, on "Greek as the International Language of Physicians and Scholars in General," "Greek in Medicine," "A Conspiracy to Suppress the Truth About Living Greek," "Memorial on the Anatomic Nomenclature of the Anatomic Society," by Dr. Hermann Triepel; "Scientific Medical Nomenclature," by Dr. Herbert Kruger, and a "Guide to the Learning of Modern Greek" for those who know classical Greek, also by Dr. Kruger.

Diets in Tuberculosis. By Noel Dean Bardswell, M.D., M.R.C.P., F.R.S. (Edin.) Medical Superintendent, King Edward VII Sanatorium, and John Ellis Chapman, M.R.C.S., L.R.C.P., Medical Superintendent, Coppin's Green Sanatorium. Cloth. Pp. 184. Price, $2.50. New York: Oxford University Press, 1908.

Under a grant from the Royal Society, Bardswell and Chapman were engaged in research work for a period of seven years, and from time to time made reports to the society. This work is an abstract of these communications and represents the final report of their investigations. The conditions of these investigations were most favorable, because each worker was the medical superintendent of a large sanatorium. From their own experiences and from the results obtained by coworkers in Europe and America they deduce general principles of diets for consumptives and are able to state the comparative value of various foodstuffs. Their practical conclusions should be of value to superintendents of sanatoria, especially to those who are compelled to strive for economic efficiency in diets.

Diseases of the Rectum and Anus, Including the Fifth Edition of the Jacksonian Prize Essay on Cancer. By Harrison Cripps, F.R.C.S., Senior Surgeon, St. Bartholomew's Hospital. Third Edition. Cloth. Pp. 588. Price, $4.20 net. London, J. & A. Churchill; Philadelphia: P. Blakiston's Son & Co., 1907.

Mr. Cripps' well-known work on the rectum comes to us in a new edition, revised, and enlarged by the addition of matter of much value. The commoner diseases of the rectum are treated in thoroughly modern fashion. The section devoted to cancer of the rectum is particularly thorough and contains an extensive table of cases. Full reports of illustrative cases are characteristic of the book. We note the omission of any reference to colopexy in the chapter on prolapse of the rectum, our author recommending only cauterization or excision as methods of treatment for that ailment. With this exception the book is a valuable accession to the literature of this specialty.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

Georgia Homeopathic Board of Medical Examiners, 153 Whitehall street, Atlanta, October 1. Secretary, Dr. R. E. Hinman, 153 Whitehall street, Atlanta.

Louisiana State Board of Medical Examiners, New Orleans, October 1-2. Secretary, Dr. Felix A. Larue, 211 Camp street, New Orleans.

Rhode Island State Board of Health, State House, Providence, October 1-2. Secretary, Dr. Gardner T. Swarts, 315 State House, Providence.

Arizona Board of Medical Examiners, Phoenix, October 5-6, Secretary, Dr. Ancil Martin, Phoenix.

Utah State Board of Medical Examiners, Salt Lake City, October 5-6. Secretary, Dr. R. W. Fisher, Salt Lake City.

Idaho State Board of Medical Examiners, Boise, October 6. Secretary, Dr. W. F. Howard, Pocatello.

Montana State Board of Medical Examiners, Senate Chamber, the Capitol, Helena, October 6. Secretary, Dr. W. C. Riddell, Helena.

Colorado State Board of Medical Examiners, State Capitol, Denver, October 6. Secretary, Dr. S. D. VanMeter, 1723 Tremont Place, Denver.

North Dakota State Board of Medical Examiners, Grand Forks, October 6-8. Secretary, Dr. H. M. Wheeler, Grand Forks.

Minnesota State Board of Medical Examiners, the Old Capitol, St. Paul, October 6-9. Secretary, Dr. W. S. Fullerton, 214 American National Bank Bldg., St. Paul.

New Mexico Board of Health and Medical Examiners, Santa Fe, October 12-13. Secretary, Dr. J. A. Massie, Santa Fe.

Arkansas Regular Board of Medical Examiners, Little Rock, October 13. Secretary, Dr. F. T. Murphy, Brinkley.

Arkansas Homeopathic Board of Medical Examiners, Little Rock, October 13. Secretary, Dr. P. C. Williams, Texarkana.

Georgia Regular Board of Medical Examiners, Capitol Building, Atlanta, October 13. Secretary, Dr. E. R. Anthony, Griffin.

Mississippi State Board of Health, The Capitol, Jackson, October 13. Secretary, Dr. S. H. McLean, Jackson.

Kansas State Board of Medical Registration and Examination, Topeka, October 13-15. Secretary, Dr. R. A. Light, Chanute.

Michigan State Board of Registration in Medicine, Lansing, October 13-15. Secretary, Dr. B. D. Harison, 504 Washington Arcade, Detroit.

Wyoming Board of Medical Examiners, October 14-16, Secretary, Dr. S. B. Miller, Laramie.

New Jersey State Board of Medical Examiners, State House, Trenton, October 20-21. Secretary, Dr. J. W. Bennett, Long Branch.

Illinois State Board of Health, Great Northern Hotel, Chicago, October 21-23. Secretary, Dr. J. A. Egan, Springfield.

Indiana Board of Medical Registration and Examination, Room 120, State House, Indianapolis, October 27. Secretary, Dr. W. T. Gott, Room 120, State House, Indianapolis.

Michigan May and June Reports.

Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, reports the written examinations held at Detroit and Battle Creek, May 25-27, and at Ann Arbor, June 9-11, 1908. The number of subjects examined in was 14; total number of questions asked, 100; percentage required to pass, 75, and 50 per cent. on each subject.

At the examination held May 25-27, the total number of candidates examined was 38, of whom 36 passed and 2 failed. One candidate took an incomplete examination. The following colleges were represented:

College.	Year. Grad.	Per Cent.
PASSED.		
American Med. Miss. Coll.	(1904) (1907)	96.1; 84, 89.9
College of P. and S., Chicago	(1908)	85.7
University of Maryland	(1903)	77.2
Detroit Homeo. Coll	(1908)	82.9, 84.4, 85.5
Grand Rapids Med. Coll	(1907)	77.4
Detroit Coll. of Med.	(1901) (1907) (1908)	75.3; 76.6; 79.6, 79.8, 80.9, 81.9, 81.9, 83.4, 84, 84.2, 84.5, 84.5, 84.7, 84.8, 85.1, 85.2, 85.3, 85.8, 86.3, 87.1, 87.7, 87.7, 88.7, 89.4, 89.6, 89.6.
Jefferson Med. Coll	(1874)	91.7
FAILED.		
Detroit Coll. of Med	(1908)	71, *78.6

At the examination held June 9-11 the total number of candidates examined was 68, all of whom passed. The following colleges were represented:

College.	Year. Grad.	Per Cent.
PASSED.		
American Med. Miss. Coll.	(1901) (1905) (1908)	92.9; 90.5; 85.2, 87.1, 90.
Detroit Coll. of Med.	(1907)	79.8
University of Michigan	(1902) (1908)	88.8; 82.9, 83.5, 83.6, 83.7, 83.8, 83.9, 84.4, 84.5, 85.5, 85.6, 85.7, 85.9, 86, 86, 86.1, 86.2, 86.5, 86.6, 86.7, 86.9, 87, 87:1, 87.1, 87.2, 87.3, 87.5, 88, 88.2, 88.2, 88.2, 88.3, 88.3, 88.8, 88.9, 89, 89.2, 89.2, 89.3, 89.4, 89.5, 89.6, 89.7, 89.8, 90.1, 90.3, 90.5, 90.8, 91.6, 92, 92.7, 93.1, 93.1.
University of Michigan, Homeo. Dept.	(1889) (1908)	95.2; 83.4, 86, 87.5, 89.4, 90.1.
American Med. Coll., St. Louis	(1903)	80.7
Dartmouth Med. School	(1908)	76.7
Jefferson Med. Coll	(1902)	89.8

* Conditioned in histology and embryology. Required four more marks to make 50 per cent.

Illinois June Report.

Dr. J. A. Egan, secretary of the Illinois State Board of Health, reports the written examination held at Chicago, June 24-27, 1908. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 360, of whom 326 passed and 34 failed. Two candidates took an incomplete examination. The following colleges were represented:

College.	Year Grad.	Total No. Examined.
PASSED.		
University of Southern California	(1908)	1
American Med. Miss. Coll	(1901) (1906)	2
Bennett Coll. of Ecl. Med. and Surg	(1908)	16
Chicago Coll. of Med. and Surg	(1908)	44
College of P. & S., Chicago	(1908)	80
College of Med. and Surg., Chicago	(1908)	1
Dearborn Med. Coll	(1907)	1
Hahnemann Med. Coll., Chicago	(1908)	21
Hering Med. Coll	(1907) (8, 1908)	9
Illinois Med. Coll	(1908)	7
Jenner Med. Coll	(1908)	17
National Med. Univ., Chicago	(1907)	1
Northwestern Univ. Med. School	(1907) (90, 1908)	91
Rush Med. Coll	(1903) (1906) (1907) (21, 1908)	24
College of P. and S., Baltimore	(1896)	1
Creighton Med. Coll	(1908)	1
Long Island Coll. Hosp	(1907)	1
University and Bellevue Hosp Med. Coll	(1899)	1
Eclectic Med. Inst., Cincinnati	(1908)	1
Ohio Med. University	(1896)	1
Pulte Med. Coll	(1901)	1
Western Univ. of Pennsylvania	(1908)	1
Jefferson Med. Coll	(1908)	2
Medico-Chirurgical College, Philadelphia	(1905)	1
FAILED.		
Bennett Coll. of Ecl. Med. and Surg	(1908)	2
Chicago Coll. of Med. and Surg	(1908)	1
College of P. and S., Chicago	(1908)	9
Hahnemann Med. Coll., Chicago	(1891) (6, 1908)	7
Illinois Med. Coll	(1908)	4
Jenner Med. Coll	(1907) (7, 1908)	8
Northwestern Univ. Med. School	(1908)	1
Med. Coll. of Indiana	(1903)	1
Barnes Med. Coll	(1908)	1

South Carolina June Report.

Dr. H. H. Wyman, secretary of the South Carolina State Board of Medical Examiners, reports the written examination held at Columbia, June 9-11, 1908. The number of subjects examined in was 16; total number of questions asked, 105; percentage required to pass, 75. The total number of candidates examined was 68, of whom 47 passed and 21 failed. The following colleges were represented:

as we believe it has, its lesson ought to put the medical man on his guard as to the source from which he derives his science as well as that of his remedies.

The Pathology of the Eye. By J. Herbert Parsons, B.S., D.Sc. (Lond.), F.R.C.S. (Eng.), Assistant Surgeon, Royal London (Moorfields) Ophthalmic Hospital. Vol. IV, General Pathology. Part II. Cloth. Illustrated. Price, $3.50. New York: G. P. Putnam's Sons, 1908.

This is the latest of the series of works on the pathology of the eye by Mr. Parsons. On the whole it is even a better example of original work, patient compilation and practical application of laboratory study than his previous contributions to the same subject. Seven chapters treat of "Injuries of the Eye," "Exophthalmos and Enophthalmos," "Panophthalmitis, Orbital Cellulitis and Thrombosis," "Sympathetic Ophthalmia," "Symptomatic Diseases of the Eye" and "Heredity."

One of the most satisfactory chapters is that on "Migratory Ophthalmia." After a careful analysis of all the theories of its pathogenesis, Parsons is of the opinion that bacterial transmission by metastasis, first mentioned by Mackenzie and elaborated by Berlin, is worthy of acceptance. He believes that most of the facts point to sympathetic ophthalmia as a disease of bacterial origin, and "if the virulence of the organisms and the varying conditions of resistance of the tissues are taken into account the variations in latent period and many other difficulties are abolished." Parsons thinks that the organism is pathogenic only for the eye and is innocuous to other parts of the body. He points out that in leprosy and tubercle their characteristic organisms set up a metastatic inflammation that, though subacute or chronic, is yet not purulent. Even virulent organisms may circulate in the blood and be harmless until they reach an organ or tissue for which they are pathogenic. For example, saprophytes, reaching the eye by way of the blood current, may set up serious ocular inflammation, although they do not affect other organs of the body through which the same infected blood flows. Parsons restates this idea of blood transmission when he says that the "fact that sympathetic ophthalmia manifests itself as a uveitis both in the exciting and sympathizing eye points to the same *causa causans*. The organism multiplies in the exciting eye; if this is removed early infection does not occur, but if organisms have escaped in quantity into the circulation sympathetic ophthalmia may follow."

That rather odd lesion "hole" in the macular retina, first described by Knapp in 1869, may be due to disease as well as to trauma. In almost all instances it is preceded by edema of the macular region, as de Schweinitz and others have pointed out. In all probability this edematous condition is followed by atrophy and slow perforation and is not necessarily due to injury, though a contusion of the globe or any injury to the orbital region may precipitate the final result.

Parsons refers to the appearance of lipemia in some cases of diabetes mellitus. The ophthalmoscopic appearances are very striking, as the retinal vessels contain a fluid which looks like milk—a condition which Uhthoff believes to be due to the arrangement of fat globules next the vascular wall, the red corpuscles remaining in midstream.

Parsons thinks that the main difference between diabetic and albuminuric retinitis lies in the absence of ophthalmoscopic changes in the arterial walls and of the absence of papillitis in diabetes—alterations so commonly observed in renal retinitis.

Health and Happiness. By Robert Maxwell Harbin, A.B., M.D. Cloth. Pp. 184. Price, $1.20. Philadelphia: Griffith & Rowland Press, 1908.

This book partakes of the character of a sermon to scientists in general and physicians in particular. Its platform may be best stated in the following words from Dr. Harbin's argumentum: "It is endeavored to produce an argument for the identities of the physical, intellectual and spiritual natures, respectively, and their relations to the Infinite Material Universe and Infinite Moral Universe. Health relates to the former, while happiness belongs to the latter realm. Science has to do with the material, while religion concerns the moral sphere. Infraction of the laws of Nature brings disease, while violation of the moral law brings unhappiness. While health has some bearing on happiness, there is no necessary causative relation between the two, for there may be happiness without health and *vice versa*, and it is not within the purpose of this discussion to refer to that phase of the subject." The argument unfolds Dr. Harbin's position, as outlined above, fairly well, but its convincingness will depend on the mental attitude of the reader. Those, however, who are interested in the study of these problems, from whatever viewpoint, may derive pleasure from it; at least it contains nothing likely to offend anyone, unless it be the blank materialist. The Argument is followed by chapters on "The Influence of Nature in Disease as Revealed by Recent Investigations," "Physiology of the Soul," "The Analogy of Disease and Sin," and "The Philosophy of Death." The style is somewhat jerky and syncopated, and in places is lacking in lucidity from inattention to the requirements of grammatical connection. Moreover, some of the scientific statements are deficient in accuracy, as when the author says that "the physiologist . . . can not distinguish a red blood corpuscle of an animal from that of the human organism."

Cataract Extraction. A Series of Papers with Discussion and Comments Read Before the Ophthalmological Section of the New York Academy of Medicine, 1907-1908. Edited by J. Herbert Claiborne, M.D., Instructor in Ophthalmology Cornell University Medical College. Cloth Pp 169. Price, $2.00. New York: William Wood & Co., 1908

This work is a valuable symposium on cataract, although the title is "Cataract Extraction." The individual papers have been contributed by men chosen for their peculiar fitness to treat the particular subject assigned to them and the whole has been most ably edited by Dr. Claiborne, who has added many valuable data from his own personal experience. Briefly, the subjects considered are: stage of development of cataract most suitable for extraction; preparation of patient and instruments; combined extraction; extraction with keratome; after-treatment; technic and indications for discission of secondary cataract; extraction in capsule; maturation operations; extraction of high myopia; final results of cataract extraction. These papers have been compiled with full discussions and may be said to cover the subject of cataract in full to date. One notable point is that in all the papers and discussions Herman Knapp of New York is the only one who mentions irrigation of the anterior chamber after cataract extraction.

Medical Greek. By Achilles Rose. Cloth. Pp. 262. Price, $1.00. New York: Peri Hellados Publication Office.

This book is a republication of a series of papers advocating accuracy according to the genius of the Greek language in the formation of medical terms from the Greek. To attain this end Rose insists that we can not ignore the work in nomenclature by modern Greek physicians, among whom are to be found, he says, excellent philologists, versed in both the ancient and the modern Greek. The book contains chapters, among other things, on "Greek as the International Language of Physicians and Scholars in General," "Greek in Medicine," "A Conspiracy to Suppress the Truth About Living Greek," "Memorial on the Anatomic Nomenclature of the Anatomic Society," by Dr. Hermann Triepel; "Scientific Medical Nomenclature," by Dr. Herbert Kruger, and a "Guide to the Learning of Modern Greek" for those who know classical Greek, also by Dr. Kruger.

Diets in Tuberculosis By Noel Dean Bardswell, M.D., M.R.C.P., F.R.S. (Edin.) Medical Superintendent, King Edward VII Sanatorium, and John Ellis Chapman, M.R.C.S., L.R.C.P., Medical Superintendent, Coppin's Green Sanatorium. Cloth Pp. 184. Price, $2.50. New York: Oxford University Press, 1908.

Under a grant from the Royal Society, Bardswell and Chapman were engaged in research work for a period of seven years, and from time to time made reports to the society. This work is an abstract of these communications and represents the final report of their investigations. The conditions of these investigations were most favorable, because each worker was the medical superintendent of a large sanatorium. From their own experiences and from the results obtained by coworkers in Europe and America they deduce general principles of diets for consumptives and are able to state the comparative value of various foodstuffs. Their practical conclusions should be of value to superintendents of sanatoria, especially to those who are compelled to strive for economic efficiency in diets.

Diseases of the Rectum and Anus, Including the Fifth Edition of the Jacksonian Prize Essay on Cancer. By Harrison Cripps, F.R.C.S., Senior Surgeon, St. Bartholomew's Hospital. Third Edition. Cloth. Pp. 588. Price, $4.20 net. London, J. & A. Churchill; Philadelphia: P. Blakiston's Son & Co., 1907.

Mr. Cripps' well-known work on the rectum comes to us in a new edition, revised, and enlarged by the addition of matter of much value. The commoner diseases of the rectum are treated in thoroughly modern fashion. The section devoted to cancer of the rectum is particularly thorough and contains an extensive table of cases. Full reports of illustrative cases are characteristic of the book. We note the omission of any reference to colopexy in the chapter on prolapse of the rectum, our author recommending only cauterization or excision as methods of treatment for that ailment. With this exception the book is a valuable accession to the literature of this specialty.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

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Utah State Board of Medical Examiners, Salt Lake City, October 5-6. Secretary, Dr. R. W. Fisher, Salt Lake City.

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Montana State Board of Medical Examiners, Senate Chamber, the Capitol, Helena, October 6. Secretary, Dr. W. C. Riddell, Helena.

Colorado State Board of Medical Examiners, State Capitol, Denver, October 6. Secretary, Dr. S. D. VanMeter, 1723 Tremont Place, Denver.

North Dakota State Board of Medical Examiners, Grand Forks, October 6-8. Secretary, Dr. H. M. Wheeler, Grand Forks.

Minnesota State Board of Medical Examiners, the Old Capitol, St. Paul, October 6-9. Secretary, Dr. W. S. Fullerton, 214 American National Bank Bldg., St. Paul.

New Mexico Board of Health and Medical Examiners, Santa Fe, October 12-13. Secretary, Dr. J. A. Massie, Santa Fe.

Arkansas Regular Board of Medical Examiners, Little Rock, October 13. Secretary, Dr. F. T. Murphy, Brinkley.

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Michigan State Board of Registration in Medicine, Lansing, October 13-15. Secretary, Dr. B. D. Harison, 504 Washington Arcade, Detroit.

Wyoming Board of Medical Examiners, October 14-16, Secretary, Dr. S. B. Miller, Laramie.

New Jersey State Board of Medical Examiners, State House, Trenton, October 20-21. Secretary, Dr. J. W. Bennett, Long Branch.

Illinois State Board of Health, Great Northern Hotel, Chicago, October 21-23. Secretary, Dr. J. A. Egan, Springfield.

Indiana Board of Medical Registration and Examination, Room 120, State House, Indianapolis, October 27. Secretary, Dr. W. T. Gott, Room 120, State House, Indianapolis.

Michigan May and June Reports.

Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, reports the written examinations held at Detroit and Battle Creek, May 25-27, and at Ann Arbor, June 9-11, 1908. The number of subjects examined in was 14; total number of questions asked, 100; percentage required to pass, 75, and 50 per cent. on each subject.

At the examination held May 25-27, the total number of candidates examined was 38, of whom 36 passed and 2 failed. One candidate took an incomplete examination. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
American Med. Miss. Coll. (1904) 96.1;	(1907)	84, 89.9
College of P. and S., Chicago	(1908)	85.7
University of Maryland	(1903)	77.2
Detroit Homeo. Coll.	(1908)	82.9, 84.4, 85.5
Grand Rapids Med. Coll.	(1907)	77.4
Detroit Coll. of Med. (1901) 75.3; (1907) 76.6;	(1908)	79.6, 79.8, 80.9, 81.9, 81.9, 83.4, 84, 84.2, 84.5, 84.5, 84.7, 84.8, [illegible], 85.2, 85.3, 85.8, 86.3, 87.1, 87.7, 87.7, 88.7, 89.4, 89.6, 89.6.
Jefferson Med. Coll.	(1874)	[illegible]

FAILED.

College.	Year. Grad.	Per Cent.
Detroit Coll. of Med.	(1908)	71, *78.6

At the examination held June 9-11 the total number of candidates examined was 68, all of whom passed. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
American Med. Miss. Coll. (1901) 92.9; (1905) 90.5;	(1908)	85.2, 87.1, 90.
Detroit Coll. of Med.	(1907)	79.8
University of Michigan (1902) 88.8;	(1908)	82.9, 83.5, 83.6, 83.7, 83.8, 83.9, 84.4, 84.5, 85.5, 85.6, 85.7, 85.9, 86, 86, 86.1, 86.2, 86.5, 86.6, 86.7, 86.9, 87, 87.1, 87.1, 87.2, 87.3, 87.5, 88, 88.2, 88.2, 88.2, 88.3, 88.3, 88.8, 88.9, 89, 89.2, 89.2, 89.3, 89.4, 89.5, 89.6, 89.7, 89.8, 90.1, 90.3, 90.5, 90.8, 91.6, 92, 92.7, 93.1, 93.1.
University of Michigan, Homeo. Dept. (1889) 95.2;	(1908)	83.4, 86, 87.5, 89.4, 90.1.
American Med. Coll., St. Louis	(1903)	80.7
Dartmouth Med. School	(1908)	76.7
Jefferson Med. Coll.	(1902)	89.8

* Conditioned in histology and embryology. Required four more marks to make 50 per cent.

Illinois June Report.

Dr. J. A. Egan, secretary of the Illinois State Board of Health, reports the written examination held at Chicago, June 24-27, 1908. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 360, of whom 326 passed and 34 failed. Two candidates took an incomplete examination. The following colleges were represented:

PASSED.

College.	Year Grad.	Total No. Examined.
University of Southern California	(1908)	1
American Med. Miss. Coll.	(1901) (1906)	2
Bennett Coll. of Ecl. Med. and Surg.	(1908)	16
Chicago Coll. of Med. and Surg.	(1908)	44
College of P. & S., Chicago	(1908)	80
College of Med. and Surg., Chicago	(1908)	1
Dearborn Med. Coll.	(1907)	1
Hahnemann Med. Coll., Chicago	(1908)	21
Hering Med. Coll.	(1907) (8, 1908)	9
Illinois Med. Coll.	(1908)	7
Jenner Med. Coll.	(1908)	17
National Med. Univ., Chicago	(1907)	1
Northwestern Univ. Med. School	(1907) (90, 1908)	91
Rush Med. Coll.	(1903) (1906) (1907) (21, 1908)	24
College of P. and S., Baltimore	(1896)	1
Creighton Med. Coll.	(1908)	1
Long Island Coll. Hosp.	(1907)	1
University and Bellevue Hosp Med. Coll.	(1899)	1
Eclectic Med. Inst., Cincinnati	(1908)	1
Ohio Med. University	(1896)	1
Pulte Med. Coll.	(1901)	1
Western Univ. of Pennsylvania	(1908)	1
Jefferson Med. Coll.	(1908)	2
Medico-Chirurgical College, Philadelphia	(1905)	1

FAILED.

College.	Year Grad.	Total No. Examined.
Bennett Coll. of Ecl. Med. and Surg.	(1908)	2
Chicago Coll. of Med. and Surg.	(1908)	1
College of P. and S., Chicago	(1908)	9
Hahnemann Med. Coll., Chicago	(1891) (6, 1908)	7
Illinois Med. Coll.	(1908)	4
Jenner Med. Coll.	(1907) (7, 1908)	8
Northwestern Univ. Med. School	(1908)	1
Med. Coll. of Indiana	(1903)	1
Barnes Med. Coll.	(1908)	1

South Carolina June Report.

Dr. H. H. Wyman, secretary of the South Carolina State Board of Medical Examiners, reports the written examination held at Columbia, June 9-11, 1908. The number of subjects examined in was 16; total number of questions asked, 105; percentage required to pass, 75. The total number of candidates examined was 68, of whom 47 passed and 21 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Howard University	(1906) 82.2; (1907)	80.3
Atlanta College of P. and S.	(1908)	78.3
Atlanta School of Med	(1908)	83.6
University of Georgia	(1903) 77.6; (1908)	81.1, 85.1
University of Louisville	(1907)	85
College of P. and S., Baltimore	(1907)	78.6
University of Maryland	(1907) 75.6, 80.8; (1908)	78.3, 80.7, 88.3
Baltimore Med. Coll	(1907) 75; (1908)	86.5
Maryland Med. Coll	(1904) 81; (1907)	85.2
Leonard School of Med	(1908)	78.2, 79.8, 83.1
Woman's Med. Coll. of Pennsylvania	(1908)	84.6
Medical Coll. of South Carolina	(1907) 78.8, 87.6, 95.3; (1908)	75.3, 78.3, 79.8, 80.7, 81.3, 81.7, 83.1, 84.5, 85.2, 87, 87.8, 89, 89.3, 89.6.
University of Tennessee	(1908)	75.2, 82.6
Meharry Med. Coll	(1908)	80.8
University of the South	(1904)	75.5
T of [illegible]ee Med. Coll	(1907)	77.5
University of Nashville	(1907)	91.7
University of Virginia	(1901) 89.6; (1906)	75

FAILED.

College.	Year Grad.	Per Cent.
Howard University	(1907)	66.5
Atlanta College of P. and S.	(1908)	64
University of Georgia	(1906) 68.8; (1908)	69.3, 69.7, 70.6, 73.7
Baltimore Med. Coll	(1903)	63
Leonard School of Med.	(1906) 66.5; (1908)	54.3, 56.2, 67.7, 75.3
Med. Coll. of South Carolina	(1901) 34; (1907) 65.7; (1908)	61.5
Meharry Med. Coll	(1907) 49.6, 62.8; (1908)	48, 74.3
University of the South	(1907)*	

* Percentage not given.

Arkansas July Report.

Dr. F. T. Murphy, secretary of the State Medical Board of the Arkansas Medical Society, reports the written examination held at Little Rock, July 14, 1908. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 51, of whom 36 passed, including 15 non-graduates, and 15 failed, including 11 non-graduates. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
College of P. and S., Little Rock	(1908)	77
Denver and Gross Coll. of Med	(1907)	75
National Med. Univ., Chicago	(1908)	75
Tulane University of Louisiana	(1908)	81, 85
St. Louis University	(1907) 85; (1908)	87
Barnes Med. Coll	(1908)	75
Geneva Med. Coll., New York	(1867)	83
Vanderbilt University	(1908)	86, 87, 88
University of the South	(1906)	83
University of Tennessee	(1908)	83
Meharry Med. Coll	(1907) 75; (1908)	93
University of Nashville	(1906) 81; (1908)	77
Memphis Hosp. Med. Coll	(1908)	77, 79
University of Wurzburg, Germany	(1903)	79

FAILED.

College.	Year Grad.	Per Cent.
Memphis Hosp. Med. Coll	(1908)	71
Meharry Med. Coll	(1907) 73; (1908)	71, 72

LICENSED WITHOUT EXAMINATION.

There were also licensed at this examination five old practitioners, including one non-graduate, who were granted license by reason of having been registered under the old law. The following colleges were represented:

College.	Year Grad.
University of Maryland	(1877)
University of Nashville	(1878)
Gate City Medical College	(1906)
University College of Medicine, Richmond	(1895)

Colorado July Report.

Dr. S. D. Van Meter, secretary of the Colorado State Board of Medical Examiners, reports the oral and written examination held at Denver, July 7-8 and 13-14, 1908. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. Fifty-nine applicants were licensed at this examination, 24 of whom passed the examination, and 35 were registered on presentation of satisfactory credentials, including state licenses. Two of the applicants appearing for examination failed to make the required percentage. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per. Cent.
Denver Homeo. Med. Coll	(1908)	75.8, 78.7, 78.8
University of Colorado	(1908)	77.5, 78.4, 79.1, 79.8, 82.4, 82.4, 83, 85.4, 86.3.
Denver and Gross Coll. of Med.	(1908)	75.7, 76.2, 76.5, 77.3, 78.5, 78.7, 79.4, 79.8, 80.2, 81.2.
Maryland Med. Coll	(1904)	75.9
Cleveland Coll. of P. and S.	(1902)	76.2

LICENSED WITHOUT EXAMINATION.

College.	Year Grad.	State Licenses.
College of P. and S., San Francisco	(1902)	Nevada
Denver and Gross Coll. of Med	(1907)	Nevada
Bennett Coll. of Ecl. Med. & Surg.	(1883) Texas; (1902)	Illinois
Chicago Homeo. Med. Coll	(1893)	Iowa
College of P. and S., Chicago	(1902)	Illinois
Hahnemann Med. Coll., Chicago	(1881) Mich.; (2, 1899)	Iowa
Rush Med. Coll	(1885)	Iowa
Northwestern Univ. Med. School	(1898) Wis.; (1905)	Illinois
Ft. Wayne Coll. of Med	(1882)	Nebraska
College of P. and S, Keokuk	(1896) Missouri; (1897)	Iowa
Keokuk Med. Coll	(1896)	W. Virginia
Kansas Med. Coll	(1907)	Kansas
University of Louisville	(1892)	Illinois
College of P. and S., Baltimore	(1891)	W. Virginia
Baltimore Med. Coll	(1905)	W. Virginia
Harvard Med. School	(1898)	Mass.
University of Michigan	(1908)	Michigan
St. Louis Coll. of P. and S.	(1890) (1897)	Missouri
Barnes Med. Coll	(1908)	Illinois
University Med. Coll., Kansas City	(2, 1906)	Missouri
Marion Sims Coll. of Med	(1899)	Missouri
Cornell Univ. Med. Coll	(1907)	New York
College of P. and S., New York	(1904)	New York
Ohio Med. University	(1898)	Ohio
Med. Coll. of Ohio	(1896)	Ohio
University of Pennsylvania	(2, 1902)	Penna.
Milwaukee Med. Coll	(1907)	Wisconsin

FAILED.

College.	Year Grad.	Per Cent.
Denver Homeo. Med. Coll	(1908)	66.9
College of P. and S., Keokuk	(1901)	56.3

Connecticut July Report.

Dr. Charles A. Tuttle, secretary of the Connecticut Medical Examining Board, reports the written examination held at New Haven, July 14-15, 1908. The number of subjects examined in was 12; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 47, of whom 37 passed and 10 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Georgetown University	(1908)	83
Yale University	(1907) 79, 84.9; (1908)	78.8, 78.8, 79.5, 80.3, 82.9, 83.2, 83.5, 84, 84.4, 85.5, 85.5, 87.9, 88.2.
Kentucky School of Med	(1908)	80.4
Baltimore Med. Coll	(1908)	75.4, 77
Maryland Med. Coll	(1908)	79.5
Johns Hopkins Medical School	(1907) 83; (1908)	78
College of P. and S., Baltimore	(1907)	81.6
Harvard Med. School	(1905) 81.8, 84.9; (1906)	79.6
Tufts College Med. School	(1907) 77.1, 82.4; (1908)	84.7
College of P. and S., Boston	(1908)	79.6
Syracuse University	(1908)	80.9
College of P. and S., New York	(1895)	85.7
University and Bellevue Hosp. Med. Coll	(1908)	81.1, 81.2
Jefferson Med. Coll	(1908)	81.3, 84.2
McGill University, Quebec	(1906)	82.6

FAILED.

College.	Year Grad.	Per Cent.
College of P. and S., Chicago	(1890)	67.2
Baltimore University	(1900)	67
Maryland Med. Coll	(1908)	68
Baltimore Med. Coll	(1906)	61.6
Johns Hopkins Medical School	(1908)	74.2
Harvard Medical School	(1904)	73.8
College of P. and S., New York	(1898)	67.9
Jefferson Med. Coll	(1908)	73.1
Laval University, Quebec	(1892)	64.7
University of Naples, Italy	(1905)	59.5

New Hampshire July Report.

Mr. H. C. Morrison, regent for the New Hampshire Board of Medical Examiners, reports the written examination held at Concord, July 15-16, 1908. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 15, of whom 10 passed and 5 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Medical School of Maine	(1904)	86
Baltimore Med. Coll	(1905)	77
Tufts Coll. Medical School	(1907) 82; (1908)	76
Boston University	(1906)	92
Dartmouth Medical School	(1907)	79, 79
Cleveland Coll. P. and S.	(1908)	81
Jefferson Med. Coll	(1908)	76
University of Vermont	(1908)	80

FAILED.

College.	Year Grad.	Per Cent.
Kentucky School of Med	(1908)	59
Baltimore Med. Coll	(1903)	71
University of Vermont	(1906) 67; (1908)	70
Laval University, Quebec	(1905)	65

LICENSED THROUGH RECIPROCITY.

College.	Year grad.	Reciprocity with.
New York Homeo. Med. Coll	(1907)	Vermont
University of Vermont	(1887) (1906)	Vermont
Dartmouth Medical School	(1900)*	

* This candidate was licensed by endorsement of his Dartmouth Medical School diploma, under the original medical act, allowing men who matriculated before 1897 and received a diploma between that date and 1903, to be licensed without examination.

Illinois July Report.

Dr. J. A. Egan, secretary of the Illinois State Board of Health, reports the written examination held at Chicago, July 22-24, 1908. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 63, of whom 46 passed and 15 failed. Two candidates took an incomplete examination. The following colleges were represented:

PASSED.

College.	Year Grad.	Total No. Examined.
George Washington University	(1907)	1
Howard University	(1908)	1
Bennett Coll. of Ecl. Med. and Surg	(1908)	1
Chicago Coll. of Med. and Surg	(1908)	1
College of Med. and Surg., Chicago	(1907)	1
College of P. and S., Chicago	(1904) (4, 1908)	5
Hahnemann Med. Coll., Chicago	(1908)	1
Hering Med. Coll., Chicago	(1908)	1
Illinois Med. Coll	(1908)	1
Jenner Med. Coll	(1908)	4
National Med. University, Chicago	(1903)	1
Northwestern Univ. Med. School	(1908)	7
Rush Med. Coll	(1908)	9
University of Louisville	(1908)	1
Hospital Coll. of Med., Louisville	(1897)	1
Barnes Med. Coll	(1908)	3
Washington University, St. Louis	(1908)	1
St. Louis Coll. of P. and S.	(1908)	1
University of Oregon	(1907)	1
Jefferson Med. Coll	(1900) (1908)	2
University of Pennsylvania	(1897) (1907)	2

FAILED.

Bennett Coll. of Ecl. Med. and Surg	(1908)	2
Hering Med. Coll., Chicago	(1908)	1
Jenner Med. Coll	(1908)	1
Rush Med. Coll	(1883)	1
Indiana Med. Coll	(1907)	1
Keokuk Med. Coll	(1891)	2
Barnes Med. Coll	(1908)	2
Homeopathic Med. Coll. of Missouri	(1901)	1
Washington University, St. Louis	(1908)	1
St. Louis Coll. of P. and S.	(1908)	2
Royal University of Naples, Italy	(1882)	1

Marriages

CHARLES G. DAWLEY, M.D., to Miss Minnie Martin, both of Los Angeles, August 12.

GEORGE H. DAY, M.D., to Miss Tommie Hornsey, both of Louisville, September 10.

JOSEPH E. HALL, M.D., to Miss Stella Grizzle, both of Alexandria, Ind., September 2.

LEONARD W. SHOEMAKER, M.D., to Mrs. May Parkison, both of Tulia, Texas, August 30.

PERCIVAL J. MEYERS, M.D., to Miss Pauline Aronson, both of San Francisco, Cal., September 9.

A. L. MCELROY, M.D., Palestine, Texas, to Miss Jettie Plaxco of Decatur, Texas, September 16.

ROBERT RETZER, M.D., Baltimore, to Miss Nannie Deidania Ridgely, at Baltimore, September 10.

GEORGE CLINTON BAKER, M.D., Gassaway, W. Va., to Miss Katherine Wells, at Baltimore, September 8.

FRANK ROBERT SLOPANSKY, M.D., Helper, Utah, to Miss Cecil May Budge of Salt Lake City, September 5.

WALTER F. LOWERS, M.D., Baltimore, to Miss Clara J. Margaret Ellinghaus, at Baltimore, September 9.

CLARENCE D. BRADLEY, M.D., Ford City, Pa., to Miss Margaret G. Dallas of Philadelphia, September 10.

CHARLES WILLIAM RAINS, M.D., Knoxville, Tenn., to Miss Margaret Whedon of Lincoln, Neb., September 16.

W. TAYLOR CUMMINS, M.D., Philadelphia, to Miss Josephine Widdecombe of West Chester, Pa., September 9.

HORACE HOWARD JENKS, M.D., Philadelphia, to Miss Eloise Comstock North, at New London, N. H., September 11.

LUDWIG MANNHEIMER LOEB, M.D., Chicago, to Miss Minna Juliet Morgenthau, at Far Rockaway, N. Y., September 14.

Deaths

Charles Harrington, M.D., educator, physician and sanitarian, who probably did more than any one man to protect the health of the people of Massachusetts, and who by his example and work stimulated other sanitarians to do similar work; died suddenly September 11, from heart disease at a hotel in Lynton, Devonshire, England, aged 52. He was born in Salem, Mass., in 1856; attended Bowdoin College in 1873 and 1874; was graduated from Harvard University in 1878; and from the Medical School of Harvard University in 1881. He then studied at the universities of Leipzig, Strassbourg and Munich for two years; and returned to Boston, where he became assistant in chemistry and later instructor and assistant professor in his alma mater, serving in these positions from 1883-1906, when he was made professor of hygiene. In 1890 he entered the service of the State Board of Health; for nine years was chemist of the board; then for five years in charge of the bureau of milk inspection, and then made secretary. He was a member of the staff of the *Boston Medical and Surgical Journal* for many years, and latterly was in special charge of its department of hygiene. His text-book on "Practical Hygiene" is a standard work and has gone through several editions. He was a member of the American Medical Association, and greatly interested in its propaganda for the public health, and this year accepted a position on the National Legislative Committee. At the Chicago session of the Association he delivered the oration on state medicine, entitled "States' Rights and the National Health," in which he gave the history of the agitation for the national control of public health, detailed the constitutional difficulties in its way, discussed quarantine legislation and the doctrine of states' rights, emphasized the need of a constitutional amendment empowering the general government to act in health matters, deplored the predominance of the commercial principle, and suggested as the remedy for present conditions the education of public sentiment. This masterly oration attracted attention from the medical profession, sanitarians and jurists both at home and abroad. In the death of Dr. Harrington the medical and sanitary world suffers a distinct loss, as he was popular as an instructor and lecturer, devoted as a laboratory student, and was an organizer and administrative officer of the highest grade.

Hermon Joseph Smith, M.D. Dartmouth Medical School, 1867; a member of the Massachusetts Medical Society; of Lowell, Mass.; surgeon in the Army for three years during the Civil War; a member of the board of United States pension examining surgeons, and of the Lowell school board; at one time city physician; and for ten years superintendent of the Lowell Corporation Hospital; died in that institution September 12, aged 71.

Solomon S. Landon, M.D. University Medical College, Kansas City, Mo., 1896; professor of anatomy in the College of Physicians and Surgeons, Kansas City, Kan.; local surgeon for the C., B. & Q. Railway; and founder of the Sheffield Hospital, Kansas City; died in a sanitarium in that city, September 10, from mental breakdown, aged 36.

Anna Maria Wilkin, M.D. University of Michigan, 1880; a member of the American Medical Association; formerly physician for the Massachusetts State Reformatory Prison for Women and the state almshouse; a member of the staff of the South Framingham Hospital; died at her home in South Framingham, September 12, from pernicious anemia, aged 52.

David French Dayton, M.D. University of Michigan, 1875; a member of the Colorado State Medical Society; United States pension examining surgeon; health officer of Trinidad, Colo.; physician of Las Animas County; and consulting surgeon to the Colorado & Southern Railroad; died at his home, September 8, from asthma, aged 58.

Joseph Beechley Clifford, M.D. Cleveland Homeopathic Medical College, 1893; a member of the McKeesport (Pa.) board of health; died about August 31 and his body was found near Brown's bridge, September 12, aged 44. He is believed to have committed suicide while despondent from nervous disease and insomnia.

Eben Seward Lawrence, M.D. Albany Medical College, 1881; coroner, 1884-1886; village president in 1894-5; physician to the Saratoga County almshouse and jail; village trustee and member of the school board; died at his home in Ballston Spa, N. Y., September 11, aged 53.

Zachara T. Houseman, M.D. Eclectic Medical Institute, Cincinnati, 1870; a member of the Ohio State Medical Association;

a veteran of the Civil War; for two years mayor of Bairdstown; died at his home in Fostoria, Ohio, from dropsy, September 12, aged 59.

James Henry Holly, for 52 years a physician and dentist of Warwick, N. Y.; at one time president of the board of education; and for three terms president of the Second District Dental Society; died at his home, March 5, from general paresis, aged 72.

James H. Carothers, M.D. Miami Medical College, Cincinnati. 1866; physician of Contra Costa County, Cal., for 30 years; a member of the legislature in 1869 and 1870; died at his home in Martinez, May 14, from cerebral hemorrhage, aged 84.

Ferdinand W. Rose, M.D. Cincinnati College of Medicine and Surgery, 1883; a member of the American Medical Association; died at his home in Jamestown, Ohio, September 3, from fatty degeneration of the heart, after an illness of three days, aged 55.

Charles M. Post, M.D. College of Physicians and Surgeons, Chicago. 1892; a member of the Washington State Medical Association; of Colfax; died at the home of his brother in Barron, Wis., September 7, from malaria, aged 44.

Emmett Porterfield, M D. Bellevue Hospital Medical College, 1883; a member of the Iowa State Medical Society; a member of the school board of Indianola, Iowa; died at his home, September 9, from angina pectoris, aged 50.

James Franklin Jones, M.D. University of Nebraska, Omaha, 1901; a member of the Arizona Medical Association; local surgeon for the Santa Fé, Prescott & Phoenix Railroad; died recently at his home in Wickenburg, aged 37.

William Penn Brooks (license, Neb.; years of practice, 1891); a practitioner of Johnson County, Neb., for more than 40 years; died at his home in Cook, August 14, from the effects of a carbuncle of the neck, aged 71.

Joseph Randolph Harmer, M.D. Howard University, Washington, D. C., 1873; contract surgeon United States Army for several years; died from paralysis at the home of his daughter in Opelika, Ala., April 15, aged 66.

Oatie Russell Hess, M.D. Kentucky School of Medicine, 1904; of Longacre, W. Va.; died in the Charleston (W. Va.) General Hospital, August 16, from drug habit, acquired during a previous illness, aged 32.

George William Curtis, M.D. University of Vermont, Burlington, 1884; a member of the Maine Medical Association; died at his home in Lisbon Falls, September 8, from cerebral hemorrhage, aged 48.

Elias F. Dodd (license, Washington County, Pa., 1881); for 55 years a practitioner of Washington County; township justice of the peace; died at his home near Van Buren, September 8, aged 84.

Charles D. Conaway, M.D. Eclectic Medical Institute, Cincinnati. 1887; a member of the Iowa State Medical Society; died at his home in Brooklyn, Iowa, September 12, from heart disease, aged 55.

William Henry Snyder, M.D. Long Island College Hospital, 1904; of Brooklyn; died in the Methodist Episcopal Hospital, Brooklyn, July 30, five days after an operation for appendicitis, aged 25.

Cyrus Hamilton Allen, M.D. University of Vermont, Burlington, 1857; surgeon in the Army during the Civil War; died at his home in Centerville, Cal., September 7, from senile debility, aged 75.

Squier R. Mather, M.D. University of California, San Francisco, 1889; a member of the Medical Society of the State of California; died at his home in San Francisco, September 8, aged 41.

Benjamin Greene, M.D. New York University, 1859; a member of the Rhode Island Medical Society; died suddenly at his home in Portsmouth, from heart disease, September 11, aged 76.

Nathan B. Hughes, M.D. New York University; a surgeon during the Civil War; died at his home in Guthrie, Okla., August 15, from uremia, after an illness of three weeks, aged 75.

Robert B. Shackelford, M.D. University of Virginia, Charlottesville, 1852; University of Pennsylvania, 1854; died at his home in Cismont, Va., September 5, from cerebral hemorrhage, aged 74.

Robert W. Fleming, M.D. Eclectic Medical Institute, Cincinnati, 1850 or 1851; died suddenly at his home in Alamo, Tenn., February 22, from cerebral hemorrhage, aged 80.

Charles E. Bailey, M.D. Western Reserve University, Cleveland. 1891; died at his home in Greensburg, Ohio, recently, from carcinoma of the stomach, aged 40.

Henry McGrew, M.D. Bellevue Hospital Medical College, 1878; died at his home in Pleasant Ridge, Ohio, from cerebral thrombosis, September 6, aged 62.

John W. Hedden, M.D. Cincinnati College of Medicine and Surgery, 1875; died suddenly at his home in Enid, Okla., March 13, from heart disease, aged 57.

Joseph Runtz Hooper, M.D. Cleveland Homeopathic College, 1877; died suddenly at his home in Elkton, Mich., August 29, from angina pectoris, aged 59.

Joseph J. Crowe, M.D. Rush Medical College, 1893; of Chicago; died at the home of his father, September 14, from pulmonary tuberculosis, aged 40.

Gus R. Burson, M.D. Starling Medical College, Columbus; died at his home in Mount Blanchard, Ohio, February 28, from cerebral hemorrhage, aged 65.

William Wallace Nevin, M.D. Jefferson Medical College, 1846; died at his home in Shippensburg, Pa., from senile debility, April 28, aged 84.

Charles Bunce, M.D. Rush Medical College, 1861; U. S. pension examining surgeon; died at his home in Hastings, Neb., July 11, aged 70.

Isaac P. Sinclair, M.D. Chicago Medical College, 1869; of Prairie Home, Neb.; died near Glenwood, Iowa, August 27, from anemia.

George T. Greenleaf, M.D. Chicago Homeopathic Medical College, 1881; formerly of Redlands, Cal.; died recently at Holtville, Cal.

Herman F. Malech, M.D. Jefferson Medical College, 1876; died suddenly at his home in San Francisco, September 7, aged 54.

Marshal Beadles (years of practice, Ky.); died at his home near Water Valley, Ky., February 10, from pneumonia, aged 67.

Edwin Ruthvin Cook, M.D. University of Pennsylvania, 1847; died at Hopkinsville, Ky., Nov. 2, 1907, aged 83.

Robert G. Griffith, a retired practitioner; died in Atlantic City, N. J., April 12, from arteriosclerosis, aged 73.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Registration in Canada.

The *Canada Lancet*, in an editorial in its July number, discusses the relation between university degrees and licenses to practice medicine issued by the council of the College of Physicians and Surgeons of Ontario. It points out that, at the time the licensing power was conferred on the council, the medical colleges of Ontario were proprietary schools conducted by individual physicians mainly for profit and secondarily for the purpose of giving young men a medical education. At present, however, the medical colleges of Ontario are all affiliated with the universities. The Toronto School of Medicine and the Trinity Medical College, formerly proprietary schools, have become extinct and their places have been taken by the Medical Faculty of the University of Toronto. The Medical College of Kingston has become the Medical Faculty of Queen's University; the Medical College of London has become the Medical Faculty of Western University, so that to-day medical education in Ontario is in the hands of the universities and not under the control of private individuals.

The *Canada Lancet* agrees with Mr. I. H. Cameron, who in speaking before a recent meeting of the alumni of the university, said: "The university should again take to itself the authority of having its degrees in medicine carry with them the privilege of practicing in Ontario and Quebec without requiring its students to go to the trouble and expense of passing several arduous and to them unnecessary examinations before the Ontario Medical Council. The universities of McGill and Laval now have this power, and it is an anomaly and absurdity to think that such a university as Toronto is impotent in this respect."

The *Canada Lancet* states that the Medical Council might still be allowed to act as a sort of sentinel to see that the standard is maintained. Evidently the interest in this question centers around its bearing on dominion registration; that is, an arrangement whereby a common standard could be fixed for the entire Dominion of Canada so that one license and one registration would be good for all of the Canadian provinces. That such a uniform system of registration would be an advantage is evident. The plan as proposed, however, involves a return to the now well-nigh obsolete plan of uniting the teaching body with the licensing body. If the right to teach medicine is confined solely to the state university, then there is no objection to such a plan since the licensing power still remains in the hands of the state, but if any of the teaching bodies are controlled or could be controlled by private individuals, then there is no justification for conferring the power to license on such teaching institutions.

At the recent meeting of the Ontario Medical Association Dr. Roddick, dean of McGill Medical University, made a strong plea for interprovincial registration. The *Lancet* predicts that ultimately such a system will prevail and that its adoption would be an advantage in every way.

While conditions in the dominion vary considerably from those in the United States, the problems involved are much the same, and the efforts of the medical profession in Canada to improve conditions will be watched with much interest.

The Attitude of the Public Toward Medical Legislation.

The *Charlotte Medical Journal* for August contains, under the above title, a well-considered editorial, evidently inspired by comments in a New Orleans paper on the Labbe bill, recently adopted by the Louisiana legislature. The editorial says:

> The inability of the public to comprehend the meaning of efforts on the part of the medical profession to protect them from quackery and imposition, or the belief that every proposal to establish legislation to this end is inspired by no other motive, so far as the medical man is concerned, than the establishment of a monopoly for his own personal advantage and aggrandizement, makes itself apparent in this country no matter where the attempt is made to introduce proper measures by legislative enactment. And it makes very little difference what the measure is directed at or against so long as the doctors are known to be backing it, or even if it is realized that the smallest good could possibly accrue to their benefit, immediately the hue and cry is raised that the doctors are attempting to establish a monopoly and thus interfere with the rights of the people to employ whomsoever they desire or to use whatever means they may wish to treat their real or supposed ills.

After quoting from the New Orleans paper in question regarding the provisions of the Labbe bill limiting the treatment of diseases to properly qualified persons, the editorial continues:

> The public mind does not grasp the idea that it could possibly need protection from itself. A man has a right to say whether or not he shall have a doctor, and what doctor he shall have. And he has the right to choose a quack if he be ignorant enough to believe in one, but the quack or the nostrum dealer has no right to impose fraud on the public simply because the public can be fooled. Ninety-nine times out of a hundred attempts to enact legislation along these lines is for the good of the people, for the confusion of the fake and not for the establishment of a medical monopoly.

The distinction here made is an important one and involves an essential principle of restrictive medical legislation. If the individual is foolish enough to entrust his life to an uneducated, untrained charlatan, there is no law to prevent him from doing so, so long as his act does not endanger the health of the community. Similarly, there is no law to prevent any citizen from eating adulterated or impure food if he wishes to do so. It is, however, an unquestioned function of the state to protect its citizens from imposture or fraud, either in medical attendance or in food-stuffs. The object of pure food laws is to prevent dishonest dealers from selling to the consumer an impure product, when the consumer thinks he is securing a pure article. This means that what was formerly sold as "genuine strawberry jam" must now be so labeled as to show that it is composed of glucose and hayseed, with anilin dyes and a very little strawberry. The object of medical practice acts is to prevent the faker and the impostor from imposing his services on the individual patient, who ignorantly believes that he is being attended by a competent physician. The ultimate objects in both cases are the enforcement of honesty in business and the protection of the individual from imposition.

The argument regarding "medical monopoly" is constantly made. Restrictive legislation is of little value unless it confers certain privileges on those who comply with its requirements. The question at issue is the ultimate purpose of the law and not the incidental provisions necessary for its enforcement. The United States government will not allow any one to act as captain, pilot or engineer on any registered vessel unless he bears a license from the Treasury Department. No one has ever accused the United States of endeavoring to establish a monopoly in masters or pilots. The object of the law requiring certain qualifications for a government license is the protection of human life. The restriction of the exercise of these occupations to licensed persons is a necessary but incidental feature of the law.

What is most sorely needed for the proper understanding of medical legislation on the part both of the profession and of the public is a clearer idea as to the purpose of such legislation, and a better understanding of the principles underlying it.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Second Month.

SECOND WEEKLY MEETING.

IMMUNITY.

Definition.—Natural and acquired, inherited (animal species, or family or individual), active and passive, antibacterial and antitoxic, phagocytic (intracellular). Non-susceptibility. Historical: Theories of cause of immunity (a) exhaustion theory, (b) noxious retention theory, (c) phagocytosis. Bacteriolytic power of serum, discovery of toxins and antitoxins. Define alexins, cell receptors, hemolysins, cytotoxins, agglutinins, precipitins, of normal serum.

Side-chain Theory of Ehrlich.—Side-chain theory of nutrition; its application to process of immunity.

Toxins and Antitoxins.—Properties of toxins; secondary toxins, toxons, toxoids, prototoxoids, endotoxins. Ehrlich's side-chain theory; action center or nucleus (benzol nucleus), cell receptors, haptophore, excess of side-chains thrown off forming antitoxins, receptors of first order. Antigens and antibodies. Preparation and standardization of toxins and antitoxins. "Negative phase" and "positive phase of inoculation with antigens.

Agglutinins and Agglutination.—Normal and immune agglutinins, agglutinogens, agglutinoids, coagglutinoids, organisms producing agglutinins, variations in quantity, distribution in body, specificity of agglutination, "group agglutination." Technic of test, microscopic and macroscopic reactions. Agglutinins, receptors of second order with haptophorous and zymotic groups.

Precipitins.—Bacterioprecipitins, phytoprecipitins, zoöprecipitins. Precipitinogen, precipitin and precipitate. Formation of precipitin, receptor of second order with haptophorous and ferment-like groups. Forensic use of precipitins.

Bactericidal Serums.—Alexins, bacteriolysins, phenomenon of Pfeiffer, inactivation and reactivation, specificity of bactericidal serums, effect on endotoxins, standardization of serums. Amboceptors and complements. Amboceptor, thermostabile body with two haptophore groups, cytophile and complementophile. Complement has haptophore and toxophore groups, effect of dilute salt solutions. Antiamboceptors and anticomplements. Specificity. Receptors of third group.

Opsonins. Phagocytosis.—Leucocytes, intra-leucocytic cytase and fixators, effect of serum on leucocytes, change of toxin by leucocytes. Opsonins in serum render bacteria more easily taken up by leucocytes. Sensitized bacteria. Opsonins destroyed by heat, deteriorate quickly, have haptophorous and opsoniferous groups. Normal and immune opsonins, bacteriopsonins and hemopsonins. Method of producing opsonins. Value in different infections. Technic of Wright's opsonic index.

Cytotoxins.—Definition, structure, theoretic value, immunization with tissue cells. Spermotoxin, leucotoxin, nephrotoxin, antinephrotoxin, hepatotoxins, neurotoxin, syncytiotoxin, thyrotoxin, pancretotoxin.

Varieties of Immunization: 1. Against living microbes. 2. Against microbic poisons.

Methods of Immunization.

I. Active Immunization. 1. Prophylactic Remedies: a. Immunization by attenuated living virus, Jennerian vaccination. b. By infectious agents killed by heat, etc., Haffkine's cholera and plague vaccines. Wright's typhoid vaccine. c. With bacterial products, Koch's old tuberculin. 2. Curative Remedies: Koch's old and new tuberculins, T. O. and T. R., Wright's pneumococcus and staphylococcus vaccines.

II. Passive Immunization (Serum of Animals Actively Immunized). Prophylactic and Curative Remedies: a. Specific antitoxic sera, diphtheria, tetanus, dysentery, etc. b. Specific bactericidal sera, typhoid, cholera, dysentery (Shiga). c. Bactericidal action assumed, not proved, antistreptococcus, antipneumococcus and antiplague sera.

III. Combined Active and Passive Immunization. Serum and vaccine, plague, etc.

Medicolegal

Character of Railroad Employés' Hospital Association and Liability of It and Railroad Company—Letting Insane Patient Leave Unattended.

The Supreme Court of Missouri, Division No. 1, says in the case of Phillips vs. St. Louis & San Francisco Railroad Company, of the Employés' Hospital Association of the Frisco Line, that it had but few, if any, of the earmarks of a voluntary benevolent association. Nor were there any earmarks of a public charity. What was received was paid for by the recipients. Under the weight of authority it could not be held to be a charitable institution. So that the rule that exempts such institutions from liability did not apply. Nor are institutions of the character of the one disclosed by this record exempted from liability by the mere employment of competent servants. They must go further and competently treat the patients received. In such case they occupy the position of ordinary physicians and surgeons and are bound by the same rules. If they undertake to furnish the treatment, not as a charity, they stand in no different light from the ordinary physician.

Furthermore, the court says that no one could read the record in the case without concluding that, if the thin corporate shell of the hospital association was broken, the yolk therein contained was the defendant railroad company. The hospital system was a worthy one, and a well-taken advance step; but, under the record in this case, such hospital association was but the agent of the defendant railroad company.

In this case an employé of the railroad company, who had been treated at one of the association's hospitals, took passage on one of the defendant's trains for St. Louis, his home. This train arrived about 7 o'clock that evening, and he left the train unharmed. About 9 o'clock of the same evening a man partially undressed and in condition to retire for the night, was lying across one of the many street car lines of the city, and was run over and killed by a passing car. It was this man.

The chief surgeon of the association, who was also the chief surgeon of the railroad company, wrote, two days after the man's death but before it was known, in effect notifying the auditor's department at St. Louis, where the man had been employed, that the man was insane and should be sent to a proper asylum, that he was not entitled to further treatment in the hospital under the rules thereof, and that no further certificates to the hospital should be given him. The court holds that this letter was admissible in evidence against the railroad company as in the nature of an official report from one of the chief officials of the defendant to another of such officials, and a report which was contemplated by the rules, which stood in the nature of an admission by an agent, whilst acting in the line of duty, and as such was an admission of the defendant. The letter, the court says, was at least admissible to show that the defendant's chief surgeon and agent had knowledge of the fact that the man was unbalanced in mind when he permitted him to be placed on the train unattended.

It was correctly contended, the court says, that the defendant railroad company was liable only for such injuries as could have been reasonably expected to have been foreseen; that is to say, if it was granted that the defendant was negligent, yet it was only liable for such injuries as would reasonably be expected to follow from such negligence, and not for mere remote contingencies. But apply that rule to this case. In the view just expressed, the defendant railroad company, by and through its agent, had assumed the duty of treating this man. The evidence tended to show that the patient was insane, and that the defendant had knowledge of that fact. Now, if the patient was insane, and the defendant had knowledge of that fact, then might it not have reasonably presumed that accident might befall a man in that condition? The freaks of a wandering mind are varied, it is true; but none knew them better than the skilled chief surgeon, who represented the defendant, when he had the man conveyed to the train. The court is not saying that the act of placing his practically undressed body across a street railway track was the result of his insane condition; but there were sufficient circumstances to authorize the submission of the question, under properly guarded instructions, to a jury for its decision. It could not be said that such an act was not one that could not have been reasonably anticipated by the defendant's surgeon when he placed an insane man aboard of a train, unattended, and without notice to his family, knowing that he would have to find his home in a populous city, filled with a network of street railway lines.

Admissible Evidence in Alleged Malpractice Case.

The Supreme Court of Vermont says that the first question in issue in the malpractice case of Willard vs. Norcross, where it affirms a judgment for the plaintiff, was whether the plaintiff had suffered an impacted "Colles' fracture" or a severe sprain, and another question followed it, namely, whether or not the defendant treated the case with the skill required of a physician and surgeon. The plaintiff claimed, and her evidence tended to show, that the injury consisted of a fracture of the radius, and that, if it were only a sprain, the defendant treated it unskilfully. On the other hand, the defendant claimed, and his evidence tended to show, that the injury was a sprain only; that his treatment of the case was skilful; that it was skilful if the injury were a fracture.

The plaintiff's counsel inquired of her whether, after the defendant made the first examination of her wrists the night after she was injured, she was able to move her hand or any of her fingers, and she answered, "No." That question was objected to on the ground that it ingeniously connected the defendant and his first visit with the plaintiff's pitiable condition that night, as if to lay the blame to him when he was not responsible for her condition. But as bearing on the character and extent of the injury, it was competent to show the condition of her hand and fingers the night after the accident.

The accident occurred in December. In the following May the plaintiff met the defendant and showed him her wrists, and asked him what she should do to which he replied 'Come up to my barn and milk my cows, and do my chores, and you will be all right" The plaintiff said to him that her wrists pained her so that she was almost insane, to which he replied 'Good good enough" Counsel made a question whether this interview between the parties was had while the relation of physician and patient continued between them The plaintiff's question asking advice and the defendant's answer, giving it indicated that they both understood that the relation still existed The answer seems frivolous, yet the defendant may have meant that the plaintiff should exercise her wrists which was consistent with his theory that they were only sprained All his conduct in relation to his treatment of the case was a proper subject of inquiry as bearing on the question whether he diagnosed and treated it skilfully The admission of this evidence could not be held reversible error

Again, the plaintiff's evidence tended to show that on the defendant's first examination he was asked whether the liniment would be a good application and that he answered "Yes, use horse liniment or any old thing", that the defendant set no bones prescribed no medicine, bandages, nor application of any kind except said liniment Another physician was called by the plaintiff as an expert witness, and duly qualified as such He was asked whether he considered the prescribing of horse liniment good surgery in case of Colles' fracture, and he answered subject to the defendant's exceptions that it was not good surgery One objection to the question was that in answering it the witness must assume the province of the jury It was true that the rule by which the defendant's treatment of the case was to be tested was that of ordinary skill, such skill as physicians and surgeons in the same general neighborhood in the same general line of practice ordinarily had and exercised in like cases On this question physicians and surgeons of practice and experience are experts and their opinions are admissible in evidence on the questions that are strictly and legitimately embraced in their profession and practice Whether the defendant's treatment was good surgery or proper treatment, whatever the nature of the injury was a question on which the witness was competent to testify

As the plaintiff's condition and complaints of pain tended to show the severity of her injury the court holds that a witness might testify to what occurred after the accident and before the defendant saw the plaintiff and that she complained of pain in her wrists Moreover the defendant being charged with malpractice and the plaintiff claiming that by reason of unskilful treatment her wrists still caused her suffering it was competent for her to show their condition at any time before or during the trial

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4 *Omentopexy to the Intestine Deprived of Its Mesentery C L Scudder Boston
5 Primary Carcinoma of the Appendix with a Statement of the Literature C O Kepler Boston

1 **X-Ray and Fractures**—Cotton says that the addition to our fund of knowledge is probably the most important service of the *x* ray We have learned what to expect and what to look for and in so doing we have learned how to look Many types of fracture formerly supposed to be rare have proved common and other lesions once commonly diagnosed, are now hardly heard of There is moreover, a whole series of joint fractures about which we formerly knew nothing Another benefit conferred by the *x* ray, used as it should be used, merely as one means of examination, is a great increase in diagnostic power We have learned new signs have come to associate certain displacements, limitations of motion points of localized tenderness etc, with the lesions to which they are appropriate, and thus by means of the *x* ray have greatly bettered our capacity to do without the *x* ray Cotton discusses its use in routine fractures, and stigmatizes as the sheerest nonsense, much that has been written as to its being criminal neglect to treat a fracture without the *x* ray There are a few classes of cases—fracture of metatarsals by direct crushing fractures of scapula some injuries about the shoulder joint, crushing injuries of the hand and wrist fractures of the pelvis, a few hip fractures some injuries to ankle and tarsus—that often do depend on the *x* ray for diagnosis, but in all these cases simple retentive apparatus until an *x* ray can be obtained is adequate treatment for the first few days With obscure and complicated luxations the problem is different but the cases in which an accurate diagnosis is essential to reduction of gross displacements are fortunately limited to a few luxations, with or without fracture in the tarsus and foot In regard to routine fractures Cotton maintains that in a great majority of cases a properly trained surgeon can make his diagnosis so far as practical details go about as well without as with the *x* ray If he has not the skill so to make the diagnosis he is unlikely to be greatly helped by the *x* ray Cotton does not decry early taking of *x* ray pictures if convenient, but merely emphasizes his belief that they are not a necessary routine The importance of *x* rays after reduction as a method of review, for the purpose of correcting error is emphasized The author contends that the time for the *x* ray is after not before, reduction for the following reasons (a) Immediate *x* ray pictures are hard to get, even in hospitals, any considerable delay in reduction means poorer reductions as a rule (b) X ray examination does not take the place of the time honored examination under anesthesia and this examination, properly done with immediate replacement of fragments usually fulfills the immediate indications (c) Considerations of difficulty in transportation expense and procrastination make it unlikely that more than one *x* ray picture will be taken in a given routine case This one may best be taken when it will check both diagnosis and corrected position and will help in prognosis As to late *x* ray pictures taken to inform ourselves as to the end result he believes that in the usual run of fractures we should use the *x* ray in practically all cases at least for record repeating the examination if we may but certainly using it at such periods as will enable us to establish or confirm the diagnosis and to check our treatment It should not be used in place of skilled manipulation or as the arbiter of end results He discusses the operative surgery of fractures

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4. **Omentopexy.**—Scudder has undertaken experiments on four dogs simply to note the behavior of the bowel after it has been shorn of its mesentery and the omentum has been used to take the place of the mesenteric blood supply. These experiments demonstrate that, in the dog, if the vessels in the mesentery are tied far from the mesenteric attachment, the gut remains viable, even when considerable mesentery is detached. The nearer to the gut the ligation is made of the mesenteric vessels, the less detachment of mesentery can be made and viable gut yet remain. From 16 to 20 cm. of gut may be denuded with subsequent omentopexy safely; 10 cm. may be denuded with omentopexy with gangrene. In the dog which recovered, after two denudations and two omentopexies the gut at the seat of operation was slightly smaller in size, and a little thicker, from edema.

Medical Record, New York.

September 12.

6 Relation of the Medical Profession to the Housing Problem. S. A. Knopf, New York.
7 Acute Intestinal Obstruction, with Special Reference to Intussusception. E. W. Peterson, New York.
8 *Abnormal Motility of the Stomach a Valuable Factor in Diagnosis of Gastric Lesions. M. R. Barker, Chicago.
9 *Lupus Erythematosus. J. P. Kanoky, Kansas City, Mo.
10 Preparation for a Genitourinary Diagnosis. J. J. Valentine, New York.
11 Keratoplasty. H. R. Lesser, New York.

8. **Motility of the Stomach and Gastric Lesions.**—Barker considers that the loss of gastric motility, characterized by long-continued stagnation of food in the stomach and the partial or complete absence of mucus in the gastric contents, is characteristic of cancer, and when such conditions prevail careful search for the Oppler-Boas bacillus should be made. If this bacillus is found the diagnosis of cancer is positive; if it is not found the patient should not be allowed to pass into that stage of the disease in which operative measures are futile, by waiting for this more positive element in the diagnosis before exploratory measures are taken. A large accumulation of mucus in the stomach is one of the important elements in the diagnosis of chronic gastritis. This is due, in a large degree, to faulty contact between the ingested materials and the nerve centers in the stomach walls causing gastric immotility, which, in turn, prevents the escape of accumulated mucus into the intestines. The vicious circle being thus formed is broken up in certain cases by long-continued lavage; hence one of the beneficial effects of this treatment in chronic gastritis. A prominent factor in the diagnosis of gastric ulcer is the exaggerated motility of the gastric walls. This is characterized by the absence of any portion of the test meal in the stomach a comparatively short time after its ingestion. Mucus is also almost or entirely absent from the stomach in this condition, being digested as quickly as deposited in the stomach by the ever-present overacid secretion, and being expelled from the stomach as quickly because of the exaggerated motility of the gastric walls.

9. **Lupus Erythematosus.**—Kanoky discusses this condition in general, and reports six cases from which he comes to the conclusion that the iodin-quinin, or iodin-salicin, method of treatment gives excellent results in a considerable percentage of cases of lupus erythematosus, especially if employed early in the disease. In cases in which the pathologic condition has been present for many years, these agents will often have to be supplemented by more vigorous measures. Of these salicylic-pyrogallic-collodion preparations are cleanly, efficient, cheap and easily obtained. The *x*-ray, while not so valuable here as in true lupus, is undoubtedly of assistance at times.

New York Medical Journal.

September 12.

12 *Explanation of Seeming Paradoxes in Modern Phthisiotherapy. S. A. Knopf, New York.
13 *Dangers of Excessive Sunlight in Tuberculosis. C. E. Woodruff, Fort Wadsworth, N. Y.
14 Cancer of the Rectum. J. P. Tuttle, New York.
15 Jaundice Due to Disease of the Biliary and Pancreas Passages. J. J. Gilbridge, Philadelphia.
16 *A Dermatitis Due to the Irritating Effect of Metol. N. T. Beers, Brooklyn.
17 Neurasthenia Ventriculi and Gastroptosis. H. Weinstein, New York.

12. **Paradoxes in Modern Phthisiotherapy.**—Knopf calls attention to the lamentable practice of the lay press in seizing on apparently contradictory statements published by medical men and converting them into sensational impeachments of the consistency of medical science. He next refers to articles published in New York newspapers and attributed to Major Woodruff of the United States Army. Knopf meets Woodruff's views in regard to the injuriousness of excessive sunlight, the particular susceptibility of blondes to tuberculosis, etc., by publishing in tabular form the result of an appeal to a number of the leading phthisiotherapists for answers according to their experience to the following six questions:

1. Do your statistics show that blonde patients do better in cold weather or cold climate regions than those having brown or black hair?
2. Have you noticed the reverse, that is to say, that brunette patients do better in warm weather or warmer climates than blondes?
3. In your opinion is sunlight harmful in cool or cold weather to the average tuberculous patient, providing he is careful in protecting his head?
4. Do you ascribe the improvement which the majority of tuberculous patients experience in winter in our temperate zones, when "taking the cure," to the cold, to the absence of sunlight, or to other reasons?
5. Have you any experience in solar therapy, that is to say, sun baths, and do you think them injurious or harmful in carefully selected cases under proper supervision?
6. Do you ascribe the relative wellbeing of the tuberculous patients in the morning as the natural sequel of sleep rest, quiet of the night, which the average healthy man also experiences, or to the absence of sunlight?

Summarizing the results a considerable majority have not found that blonde patients do better than brunettes in cold regions, or that brunettes do better than blondes in warm regions. All are agreed that sunlight is not harmful in cool or cold weather to the average tuberculous patient, providing the head is protected. Nearly all appear to hold that the improvement experienced during winter, when taking the cure in temperate zones, is due to the cold and not to the absence of sunlight. Many consider sunbaths beneficial, none injurious. The relative wellbeing of tuberculous patients in the morning also is attributed generally to rest and sleep, but in no case to the absence of sunlight. Knopf quotes passages from the letters of many of his correspondents. He admits, however, that from physiologic experiments on men and animals we have learned that "too much sunshine is as injurious as its total absence is deleterious," and he considers Major Woodruff right in some respects, for there is no doubt that in tropical countries the newly arrived person who has been born and raised in northern climes, be he blonde or brunette, unless he leads an exceedingly sober and careful life, and protects himself against the strong actinic rays of the sun and the intense heat of midday, is bound to suffer and become more easily a victim of endemic and epidemic diseases not excluding tuberculosis. Even in temperate zones, in hot weather when everyone feels better in the shade, it is absurd to expect the consumptive to be more comfortable in the sun. Knopf describes his method of prescribing a sunbath; he gives instances of the importance of individualization in the treatment of tuberculosis, and concludes that because we vary our treatment to the patient's individual conditions, sometimes even to his likes and dislikes, but always with the one point in view, to do the best for him, what seem like paradoxes, whether they refer to air, sunlight, water, climate, medicine or other remedial agents, are really the result of careful and painstaking individualization.

13. **Dangers of Excessive Sunlight in Tuberculosis.**—Woodruff replies to Knopf's article as above abstracted, and states that it was discovered by the Army, as early as 1900, that in all cases of tuberculosis white people in the tropics promptly perish unless they are sent home. The factors in this loss of resistance are heat, humidity, and in those with unpigmented skins, excessive light, and he quotes Sir Alfred Keogh, medical director of the British army, as supporting him with the assertion that investigations prove that the depressing effects in India are due to the actinic rays, and not to the heat rays, of the sun. To support his views as to the evil effect of sunlight in tuberculosis, Woodruff states that the tuberculosis mortality rate per 1,000,000 living is least in the cloudiest parts of Europe. Cloudy cities, like Amsterdam and London, have low rates, while sunny places like Moscow, St. Peters-

burg and Vienna, have high rates. He quotes the table from Hanscomb's 1908 report of the percentage of deaths from consumption to deaths from all causes in various occupations, to show that light or darkness may have opposite effects from what we now believe. He then discusses Knopf's points in detail and refers to the opposition of almost the entire profession in 1840, to Dr. George Bodington's opinion that tuberculosis should be treated in the open air, an opinion to which after all these years, the profession is now coming round. In 1840 the profession was strong in the opinion that cold air was fatal and they drove Bodington's patients away and closed this first modern sanatorium. Dr. Knopf, Woodruff asserts, is repeating the error—instead of giving facts he is giving opinions of the leaders. His "authorities" have never noticed any harm from excessive sunlight, not because it does not exist, but because they have never looked for it. Bodington's opponents never noticed the harm done by indoor treatment, and their opinion likewise did not prove that there was no damage by it.

16. **Metol Dermatitis.**—Beers points to the great increase of dermatitis among photographers which, in these days of amateur photography, embraces a large mass of people, from the irritant effect of metol (monomethyl-paramido-phenosulphate) which forms an ingredient in most of the developers on the market. He has found a saturated solution of paraffin in benzin, into which the fingers are dipped before developing, the best preventive. The condition must be treated symptomatically, with rest and protection of the affected parts, cathartics in a severe attack, and before the skin is broken some cooling astringent lotion such as lead and opium wash should be prescribed. After the skin is broken, care must be taken to protect the parts thoroughly and to use the blandest of applications. Zinc stearate makes a useful dusting powder; 1 or 2 per cent. of carbolic or salicylic acid may be added. When an ointment is indicated in this stage the following is mild and soothing:

℞.	gm. or c.c.		
Hydrarg. chlor. mit.		65	gr. x
Acidi carbolici		65 to 1.30 or	gr. x-xx
Ung. aquæ rosæ	30		℥i

M.

In the chronic form of the disease, when cracks form and the skin is indurated or scaly, an ointment containing one or more of the stimulating drugs gives the best results:

℞.	gm. or c.c.		
Acidi salicylici	1	95	gr. xxx
Pulv. amyli	3	90 to 7.80 or	ʒi to ʒii
Zinci oxidi	1	95 to 2.90	ʒss to ʒi
Ung. petrolati	30		℥i

M.

℞.	gm. or c.c.		
Ichthyolis	3	90	ʒi
Acidi salicylici	1	30 or	gr. xx
Acidi borici	1	95	gr. xxx
Ung. zinci oxidi	30		℥i

M.

To any one of these prescriptions resorcin or oil of cade may be added if necessary.

Medical Fortnightly, St. Louis.

August 25.

18 Korea and Japan. R. H. Eccles, Brooklyn, N. Y.
19 Two Cases of Raynaud's Disease. T. D. Woodson, St. Louis.

The Lancet-Clinic, Cincinnati.

August 29.

20 Surgical Treatment of Acute Intestinal Obstruction. W. A. Mellck, Zanesville, Ohio.
21 *Internal Strangulated Hernia, or Internal Intestinal Strangulation. E. M. Brown, Chicago.
22 Excesses in Surgical Cleanliness. M. A. Austin, Anderson, Ind.
23 *Treatment of Pus Tubes. J. E. Cannaday, Hansford, W. Va.

21. **Internal Strangulated Hernia.**—Brown maintains that all internal cases of strangulated hernia or all internal strangulations show sufficiently early symptoms for an early diagnosis and operation before absolute occlusions have developed. When the diagnosis is obscure an exploratory operation should be done. In determining when a strangulated bowel is viable Brown follows these rules: A bowel is considered safe: 1, when on liberation of the constriction it receives circulation; 2, when the peritoneum is smooth, shiny and not blistered, whether dark in color or not; 3, when no thrombi are present in the mesenteric border. If, however, there is rupture, ulcer, perforation, complete thrombosis of the mesenteric vessels, permanent unyielding stricture, excoriated peritoneum and blackened bowel, which has lost all contractility, it should be condemned. As regards anastomosis: 1, In late moribund cases, in which time of anesthesia and manipulation are important elements, we should rapidly resect and turn the divided ends out through the incision; 2, in acute early cases, in which the small bowel is involved, we should remove liberally beyond the condemned portion, turn in the divided ends with a purse-string suture, and make a lateral anastomosis; 3, when large and small bowel are gangrenous, end-to-side anastomosis should be made; 4, in resection of large bowel the end-to-end anastomosis is preferable.

23. Abstracted in THE JOURNAL, Nov. 2, 1907, p. 1552.

Surgery, Gynecology and Obstetrics, Chicago.

August.

24 *Excision of the Rectum for Cancer. W. C. Lusk, New York.
25 Case of Hermaphrodism. G. B. Johnston, Richmond, Va.
26 *Case of Torsion of the Omentum. W. W. Grant, Denver, Colo.
27 *Case of Intra-abdominal Rotation of the Great Omentum. Unaccompanied with Hernia. W. Fuller, Chicago.
28 Pleural Reflexes. J. A. Capps and D. D. Lewis, Chicago.
29 *Advantage of the Elastic Ligature in Certain Cases of Anal Fistula. C. M. Echols, Milwaukee, Wis.
30 Case of Concealed Hemorrhage in Pregnancy, Contrasted with One of Extrauterine Pregnancy. G. E. Shoemaker, Philadelphia.
31 *Are Gloves and Masks Advisable in Surgery? E. S. Bishop, Manchester, England.
32 Case of Toxemic Pernicious Vomiting of Pregnancy, with Total Nitrogen and Ammonia Estimations. W. H. Buhlig and H. M. Stowe, Chicago.
33 Case of Linitis Plastica of the Stomach (Brinton) Cured by Jejunostomy. A. F. von Eiselsberg, Vienna, Austria.

24. **Excision of the Rectum for Cancer.**—In this monograph, for such it practically is, Lusk reports a case in a woman operated on with implantation of the sigmoid into the anus. He goes into detail in regard to the surgical anatomy and technic of the operation, the article being elaborately illustrated with half-tones accompanied by diagrammatic sketches of the pictures represented in half-tone.

26. Abstracted in THE JOURNAL, Feb. 1, 1908, p. 397.

27. **The Great Omentum.**—Fuller describes a case of intra-abdominal rotation of the great omentum, unaccompanied with hernia. He discusses the embryology, anatomy, and functions of the omentum, summarizes what is known regarding torsion of the omentum, adopts the classification of Corner and Pinches into abdominal, hernial, and hernial and abdominal, and discusses the etiology and mechanism, diagnosis, and treatment. He concludes as follows: 1. The great omentum should be regarded by the surgeon as an organ of vast importance, and its uses can not with safety be curtailed or compromised. 2. In all surgical operations requiring resection of the great omentum, the latter should be done in a careful manner, without leaving heavy or clumsy omental stumps uncovered by peritoneum, and the omentum at the completion of all operations should be unfolded and spread over the abdominal organs in a normal manner. 3. If the condition in any operation within the peritoneal cavity presents the slightest doubt as to the causes and nature of the extent of the difficulty, search for a complete and satisfactory explanation of the question in hand should include examination of the greater or gastrocolic omentum.

29. **The Elastic Ligature in Anal Fistula.**—Echols considers the operation by elastic ligature, while not applicable to all cases, such as the horseshoe fistula encircling the bowel, the operation of choice for ordinary complete fistula for the following reasons: 1. It preserves the contour of the anus and does not impair the function of the sphincter. 2. It is suitable for patients who can not or will not take a general anesthetic. 3. The period of complete disability of the patient after operation is less.

31. **Gloves and Masks.**—Bishop discusses the relation of gloves and masks to efficiency, and gives reasons for conclud-

ing that masks and gloves, however theoretically correct, hamper materially the surgeon's movements, and, therefore, may *easily do far more damage* to the prospects of a safe recovery—which is, after all, the main end in view—than would result if they were omitted.

Journal of Nervous and Mental Disease, New York.

August.

34 *Brain Tumor Localized a[illegible] with Symptomatology of Lesions [illegible] Parietal Lobe C K Mills and [illegible]
35 Herpes of the Membrana [illegible] Affection of the Petrosal Ganglion T J Orbison, Los Angeles, Cal

34 Abstracted in THE JOURNAL, July 4, 1908 p 68.

Atlanta Journal-Record of Medicine.

August

36 *Sacroiliac Disease C R Andrews and M Hoke, Atlanta
37 Examination of the Feces as an Aid to Diagnosis J N Le Conte, Atlanta
38 Use and Abuse of Drugs in Tuberculosis W M Jones High Point, N C
39 Chronic Gastric Ulcer its Surgical Treatment E G Jones, Atlanta
40 Obstetrical Work from Standpoint of General Practitioner A B Croom, Maxton N C
41 Variable Effects of Apomorphin F A Boland, Atlanta
42 *Improvement in Method of Determining if Gonorrheal Infection is Present in an Inflamed Prostate or Seminal Vesicle E Ballenger Atlanta

36 **Sacroiliac Diseases.**—Andrews and Hoke point out that the pelvic girdle is the structural base for the skeleton and any instability *of pelvic articulations must interfere with proper* action of muscles attached thereto, conversely, any lack of development or alteration in tone of the muscles and ligaments protecting and holding the pelvic joints in position must likewise render impossible their normal and anatomic relation and induce impaired function Certain physiologic conditions bear a direct relation to relaxation of the sacroiliac joints This is demonstrable in pregnancy and often during menstruation, and explains many of the backaches occurring in the menstrual period. The authors discuss the movement of the sacrum from an obstetric viewpoint and state that with an existing excessive intestinal putrefaction, any injury or undue strain to a joint may precipitate a toxic inflammation Such *inflammations are common* in the sacroiliac joints They discuss the effect of position, recumbent and sitting *Lumbago is often simply a manifestation of a* sacroiliac sprain They discuss displacements and infectious processes, and call particular attention to the point that toxic inflammation due to intestinal putrefaction may be superimposed on any other condition of the sacroiliac joint In cases of strain long standing should be avoided and a correct attitude maintained When sitting, lounging should be avoided; when recumbent, a firm pillow under the hollow of the back will prevent the lumbar spine from sagging Adhesive plaster straps across the lower back and buttocks, or a belt, will be of service.

42 **Gonorrheal Infections.**—Ballenger describes a mode of ascertaining if gonococci are present in an inflamed prostate or seminal vesical by creating a chemical urethral discharge, and when it is well established sealing the meatus with collodion or adhesive plaster *and massaging* the secretion from the prostate or vesicles into the inflamed canal, where it is left until the patient urinates Gonococci will proliferate if placed in this favorable environment and may be demonstrated in the subsequent discharge

United States Naval Medical Bulletin, Washington, D. C.

July

43 *Treatment of Tuberculosis by Administration of Mercury B L Wright U S Navy
44 Pathologic Anatomy of Guha A J Geiger, U S Navy
45 History of Epidemics in Guam F E McCullough, U S Navy
46 *Result of 300 Examinations of Feces with Reference to the Presence of Amebas R F Hoyt U S Navy
47 Case of Banti's Disease with Splenectomy and an Arteriovenous Anastomosis F A Vickery, U S Navy
48 Modification of the Crile Cannula L A Vickery, U S Navy.

43. **Mercury in Tuberculosis.**—Wright believes that mercury is a specific in tuberculosis and that it has a destructive effect on the tubercle bacillus His other papers on this subject were abstracted in THE JOURNAL, July 4, 1908, page 75, and September 12, page 944.

46. **Examination of Feces for Amebas.**—Hoyt analyzes the results of 300 examinations of feces, made as part of the regular laboratory routine at *the Canacao Naval Hospital, P. I. In* 200 cases blood examinations were also made, and in 100 an occult test was made. *Of the* 300 patients only 20 were admitted on the diagnosis of dysentery. The author concludes from these *observations* that, reasoning from a knowledge of the power *of other forms of intestinal* parasites to produce symptoms of a general nature, such as those mentioned, and taking into consideration the reported findings at autopsy in many cases of *amebic infection* without apparent symptoms of dysentery, it *would be unwise to ignore this organism as* an etiologic factor in affections other than dysentery.

American Journal of Physiology, Boston.

August

49 Comparative Study of the Temperature Coefficient of the Velocities of Various Physiologic Actions C D. Snyder, Berlin Germany
50 *Kidney Secretion of Indigo Carmin, Methylene Blue and Sodium Carminate G D Shafer, Ithaca, N Y.
51 ([illegible] of the Invertebrate Heart—A Note [illegible] the Pulsating Blood Vessels in the [illegible] Chicago
52 *Resection and End to End Anastomosis of the Oviduct in the Hen without Loss of Function. R. Pearl and F. M. Surface
53 *Hydrolysis of Vignin of the Cow-Pea (Vigna Sinensis). T B. Osborne and F W Heyl
54 Experiments Bearing on the Nature of the Glycogenolytic Fibers in the Great Splanchnic Nerve J. J R MacLeod, Cleveland, Ohio
55 Influence of Stimulation of the Great Splanchnic Nerve on the Rate of Disappearance of Glycogen from the Liver, Deprived of Its Portal and Systemic Blood Supplies J J R. MacLeod and H O Ruh, Cleveland, Ohio.

50 **Kidney Secretion.**—Shafer reviews the literature concerning the theories of secretion of urine and the experimental work with various coloring matters that bears on these theories, and finally describes his own experiments with indigo-carmin methylene blue and sodium carminate. His results, in the main support the theory of Heidenhain, that most organic salts and free acids are secreted by the epithelium of the convoluted tubules The experiments show that indigo carmin, whether in its colored or colorless form, is excreted by the cells of the tubules, and there is no direct evidence that indigo carmin is reduced in the living animal body, and it is, at least, not completely reduced. Methylene blue is reduced and is excreted by the epithelium of the tubules in the colorless condition, but *is oxidized to the blue compound to a large* extent, at least, in the bladder. Sodium carminate is excreted by the glomeruli, but there is *reason to think that a* slow excretion also takes place by way of the convoluted tubules

52. ***Anastomosis of Oviduct.***—Pearl and Surface show that the oviduct in the hen can be resected and an end-to end anastomosis made without permanent loss of function, the hen producing practically normal eggs.

53 **Hydrolysis of Vignin.**—*The analysis of the product of* hydrolysis of the vignin of the cow pea, according to Osborne and Heyl, is able to account for only about 70 per cent of the material by the determination of known substances. It is *not likely that any quantity* of tryptophan is missed, and there is no evidence that the missing substance is to be accounted for by a carbohydrate residue in the proteid molecule, so that the almost inevitable conclusion is that there are still unrecognized substances among the products of the decomposition of proteins.

American Journal of Public Hygiene, Boston.

August

56 Determination of Oxygen Consumed in Waters E M. Chamot, Ithaca, N Y
57 Effect of Heating on the Determination of Leucocytes in Milk H L Russell and C. Hoffman
58 *Diphtheria Diagnosis* B R Rickards, Boston
59 Mathematics of the Bacterial Count H. W. Hill, Minneapolis
60 *The House Fly as an Agent in the Dissemination of Infectious Diseases T Smith, Boston
61 *Disinfection of Books B R Rickards, Boston

60 **The House Fly as a Disseminator of Infectious Diseases.**—Smith points out that the war on flies can not be successfully waged with *fly-paper and fly-traps, but must be waged,*

as was done with mosquitoes, in the country of the animal itself, that is, against its breeding-places. Flies may be divided into biting and non-biting, the former including horse flies and stable flies, and the latter the house fly and various flesh flies and blow flies. The development of flies is practically the same as and resembles generally, that of mosquitoes, if we substitute putrefactive and fermenting animal and vegetable matter for water as a breeding place. The fly is essentially a scavenger and would be beneficent rather than injurious were it not for its habit of bringing disgusting material from its normal feeding places and depositing it on food. The breeding places are probably neglected garbage and stables with accumulating manure or a dump heap. At the seashore dead fish form good breeding grounds. Smith points out that all movements in the interest of the public health broaden out from their original narrow intent, and the campaign against flies would eventuate in a campaign for general cleanliness.

61. **Disinfection of Books.**—Rickards concludes that formaldehyd is inefficient as a means of disinfecting books, while steam sterilization is rapid and efficient, and does not materially harm the books except those with leather binding. The books should be subjected to dry steam for at least thirty minutes at from fifteen to twenty pounds' pressure.

University of Pennsylvania Medical Bulletin, Philadelphia.

August.

62 *Brain Tumor Localized and Completely Removed, with Some Discussion of the Symptomatology of Lesions Variously Distributed in the Parietal Lobe. C. K. Mills and C. H. Frazier, Philadelphia.
63 Two Cases of Streptococcus Infection which Gave a Typical Widal Reaction. J. Tyson and R. Pemberton, Philadelphia.
64 Examination for Carbon Monoxid Hemoglobin of the Blood of a Miner whose Death Occurred in a Recent Gas Explosion in a Bituminous Coal Mine, with Quantitative Determination of the Carbon Monoxid Contained in the Blood. J. Marshall, Philadelphia.
65 Medical Practice in Canton, China. A. H. Woods, Bryn Mawr, Pa.
66 *Simple and Accurate Method for Measuring the Clotting Time of the Blood. M. Solis-Cohen, Philadelphia.

62. Abstracted in THE JOURNAL, July 4, 1908, p. 68.

66. **The Clotting Time of the Blood.**—Solis-Cohen discusses the various methods that have been employed for measuring the clotting time of the blood. He has devised an apparatus based on Milian's method, but which eliminates the errors due to evaporation and temperature change. It consists of a German Stender dish, 80 mm. in diameter and 40 in height, a small pan with an outlet and with a bracket for holding a thermometer (an ordinary tin baking pan, the outlet and bracket being made by a tinsmith will do), a bath thermometer, a wide elastic band, a piece of rubber tubing, a stop-cock and a millimeter scale. The rubber tubing is attached to the outlet of the pan, and clamped with a stop-cock, and the thermometer slipped into the bracket or holder. The pan is filled with water at 37 C. (98 F.) and maintained there by the addition of hot or cold water as required. The Stender dish is cleansed, the rim smeared with lanolin or petrolatum, the lid thoroughly cleansed and applied and held in place by the rubber band. The dish is then placed, everted, in the pan of water. The ear or finger is next thoroughly cleansed and given a free puncture with a clean, sharp instrument, so that the blood flows freely without undue pressure. The Stender dish is removed from the water, quickly dried, and the elastic band removed. The first drop of blood is wiped off and note is made of the time the second drop appears. This drop, while on the finger or ear, is lightly touched to the upper surface of the inverted lid of the Stender dish held horizontally. The part is then wiped off and several other drops are similarly deposited on the lid on either side of the median line, the time of the appearance of each drop being also noted. The dish is then placed on the lid and the rubber band applied. Placing the millimeter scale under the inverted dish, the size of the different drops is quickly measured and noted. Only those drops are regarded whose diameter measures 5 mm. or 6 mm. The dish is then placed back in the water bath with the lid underneath. At intervals the dish is removed from the water and held vertically, while the contour of the drops is rapidly observed from the side or the density studied by looking at the drops through the lid. As quickly as possible the dish is returned to the horizontal position and replaced in the water. So long as, when observed from the side, the drops sag, are tear-shaped or pear-shaped, or, when looked at full, are denser below and clearer above, coagulation has not occurred. As soon as the drop is rounded on profile view, and of the same density throughout when seen from the front, coagulation is completed. To confirm this, the dish is removed from the lid and the clot is picked off with a needle or straw. The time at which coagulation was first observed is noted, and the period between this and the moment the drop appeared on the part is taken as the clotting time. With this method results are surprisingly constant.

Northwest Medicine, Seattle.

August.

67 *Organization and Centralization of Medicine and Surgery of the Northwest. R. C. Coffey, Portland, Ore.
68 Standards of Medical Education. A. C. Panton, Portland, Ore.
69 *Practical Methods of Dealing with Quacks and Quackery. A. W. Smith, Portland, Ore.
70 Value of Vision in Its Relation to Accident Insurance and Legal Indemnity. H. V. Würdemann, Milwaukee, Wis.

67. Abstracted in THE JOURNAL, Aug. 29, 1908, p. 780.

69. **Quacks and Quackery.**—Smith says that there are two special reasons for the Pacific Coast being infested with quacks: namely, failure on the part of the public to appreciate the quack in his true light, and laxity of law enforcement. The quack hitherto has not been prosecuted, because the public deemed him harmless, but now that the masses are being educated to the dangers of his business it is time to enforce the laws against fraud and misrepresentation. Unfortunately, the daily papers, as a rule, are not in sympathy with the movement to make the quack live up to the letter of the law. The campaign against quacks has brought to light some startling cases. The author reports one in which a quack extorted $500 from poor people, who had to mortgage all they possessed to raise the money for the "cure" of a cancer patient already at the point of death, and who died in twenty-four hours. Yet this quack had the assurance to advertise this as one of his successful cases, cured by his treatment. He was arrested, convicted, fined and sentenced to hard labor. The profession of Portland has secured sixteen convictions of quacks for practicing medicine without a license. To rid ourselves of these undesirable citizens all that is necessary is a united profession. We must rally round the medical associations and make them stand for something, electing officials with the courage of their convictions. We must banish the indifference that has hitherto characterized us as a profession. A bill making it unlawful for any newspaper in Oregon to publish any medical advertisement of an indecent nature passed both the house and senate, but was lost (or stolen) and not located until too late for the governor's signature to make it a law. A new bill on the same lines will be presented to the next legislature.

Journal of the Oklahoma State Medical Association, Guthrie.

August.

71 *Surgical Affections of the Gall Bladder. L. Long, So. McAlester.
72 Purposes and Attainments of Cystoscopy and Demonstration of the Author's Universal Cystoscope. B. Lewis, St. Louis, Mo.
73 Extrauterine Pregnancy. A. A. West, Guthrie.

71. **Affections of the Gall Bladder.**—Long reports three cases, one of which presents peculiar features. The patient was a white woman, aged 46, with a history of illness and invalidism covering eleven years. Extreme jaundice was present. A diagnosis had been made of obstruction of the common duct, probably by stone, with possibility of cancer as a complication, the last being suggested by the patient's rapid decline during the preceding two months. At the operation not the least remnant of the gall bladder could be found, nor could the common or cystic ducts be made out. A mass of adhesions involved pylorus, duodenum, gall-bladder region and under surface of the liver. The pancreas was felt as a hard, resisting body. A diagnosis of cancer was made, the abdomen closed, and the family warned of the probable outcome. The patient did well and in two weeks was out of hospital, declaring she had never felt better for years. Moreover, she

has steadily improved in the past six months and is still improving. Jaundice has disappeared, she eats heartily, walks erect, goes anywhere she wishes to, and has gained twenty pounds in weight. The author can only account for this remarkable result by supposing that in breaking up adhesions to outline the structures of the bile-tract area he released the common duct, so that its lumen would again permit the flow of bile fluid.

Journal of the Michigan State Medical Society, Detroit.

August.

74 *Problems in Preventive Medicine. H. Ostrander, Kalamazoo.
75 Treatment of Joint Tuberculosis. E. H. Ochsner, Chicago.
76 *Case of Obstetrics with Sequelæ. W. P. Manton, Detroit.
77 *Treatment of Chronic Diseases of the Heart by Carbonated Mineral Baths and Auxiliary Exercises. W. L. Wilson, St. Joseph.
78 *Diet and Digestion. F. J. Groner, Grand Rapids.

74. Abstracted in The Journal, Aug. 22, 1908, p. 698.

76, 77, 78. Abstracted in The Journal, Aug. 29, 1908, pp. 784, 786.

New York State Journal of Medicine, New York.

August.

79 The Obstetric Forceps. J. K. Quigley, Rochester.
80 *Method of Appendicectomy. T. L. Deavor, Syracuse.
81 *Diffuse Peritonitis in Women, with Report of Fifty Cases. E. McDonald, New York.
82 Tuberculous Salpingitis. Results of Surgical Treatment in Four Recent Cases. J. O. Stranahan, Rome.
83 *Traumatism as an Etiologic Factor in Appendicitis. J. P. Warbasse, Brooklyn.
84 Peritoneal Adhesions. A. H. Traver, Albany.
85 Treatment of General Peritonitis. H. C. Rooth, Buffalo.
86 Unhealthy Tonsils the Cause of Grip. T. B. Loughlen, Olean.
87 Porro Cesarean Section. F. H. Stuart, Brooklyn.
88 Lives of Officers of the Medical Society of the State of New York. J. J. Walsh, New York.

80. **Appendicectomy.**—Deavor describes a method which he has used in a fairly large number of cases, some being interval cases, others suppurative, and others gangrenous, with or without perforation. The following are the steps in the operation, some of which are common to all methods: Incision and delivery of the appendix; ligation and division of the mesentery; dissection of peritoneal cuff back to the cecum; ligation and excision of the appendix, and disinfection of the stump; ligation of peritoneal cuff over stump; union of mesenteric stump with that of the appendix; closure of incision.

The appendix is delivered with as little of the cecum as possible, but this will vary with the individual case. Deavor's custom is usually not purposely to displace the omentum and intestines in searching for the apppendix, but while traction is being made with the left hand, the right index and middle fingers are carried at once to the right side of the colon, then downward to the cecum, when, without seeing the longitudinal band of muscle fibers, the appendix is found and lifted out. The mesoappendix, when present, is ligated in section, or preferably in one mass, half an inch from the cecum, the curved needle being carried close to the body of the appendix. This ligature is left long. When the mesoappendix is absent or very small, the appendicular artery alone is tied. Division of the mesentery greatly relieves the appendix and gives immediate room, and the ease with which a peritoneal cuff can be rolled back to the cecal junction is known to every one. This cuff should be long enough to allow for retraction. The body of the appendix is then ligated close to the cecum and excised. Disinfection of the stump is accomplished by means of the cautery, or better by carbolic acid. A blunt probe without cotton reaches all parts of the stump and its lumen. It is a wise precaution to displace the residue from the part of the appendix to be ligated, before placing the ligature, using a dressing forceps. The field having been cleansed and dried, all sponges are now removed, and the peritoneal cuff is returned and ligated like a sack over the end of the stump and the ligature tied with that of the mesentery previously left long. This brings the cut edges together and practically obliterates all dead space and raw surfaces. The wound is then closed. Deavor discusses the forms of incision and also the question of ligature. So far, he has used only chromicized catgut, and he mentions an experiment to show that without very strong traction a tight, durable knot can hardly be formed with dry catgut, but that by slightly softening the same material before using very little force is required to produce a closely fitting knot, which will not relax its hold on further softening by the tissues.

81. Abstracted in The Journal, Feb. 8, 1908, p. 477.

83. **Traumatism and Appendicitis.**—Warbasse discusses the part that traumatism can play in producing appendicitis, and concludes as follows: The decision must be reached on two grounds: the association of the two conditions (appendicitis following traumatism), and the well known and accepted principle of surgical pathology that traumatism in any tissue predisposes and conduces to inflammation. The appendix, by virtue of its position and structure and the history of its inflammation, falls under both these stipulations. It is susceptible to traumatism; it sometimes is injured, and its inflammation sometimes follows such injury. There is every reason, therefore, to regard traumatism as an etiologic factor in appendicitis.

Vermont Medical Monthly, Burlington.

August 15.

89 *Partial Thyroidectomy in Treatment of Exophthalmic Goiter. A. P. Heineck, Chicago, Ill.

89. This article by Heineck appeared under another title in *Surgery, Gynecology and Obstetrics*, December, 1907, and was abstracted in The Journal, Feb. 1, 1908, page 401. It was also published as an original article in the *Chicago Medical Recorder*, January, 1908, and in several other journals. Apparently the only thing new in the present article is the title.

Chicago Medical Recorder.

August 15.

90 Treatment of the Commoner Penetrating Wounds of the Eyeball. F. Allport, Chicago.
91 Psychic Treatment. J. Grinker, Chicago.
92 *Present Status of the Relation of Bovine to Human Tuberculosis. C. J. Whalen, Chicago.
93 Conservative Drainage of High Pelvic Abscess. R. C. Turck, Jacksonville, Fla.
94 Carcinoma of the Rectum; Comparative Results of Operative Procedures. J. R. Pennington, Chicago.
95 Desmoid Reaction. A. D. Kohn, Chicago.
96 Repair of Superficial Perineal Lacerations with Michel's Clamps. O. Betz, Heilbronn, Germany.
97 Cicutine. W. F. Waugh, Chicago.

92. **Bovine and Human Tuberculosis.**—Whalen discusses the relation of bovine and human tuberculosis, and concludes that experimental work strongly favors the view that infection in pulmonary tuberculosis takes place, in a majority of instances, through the respiratory and not the alimentary tract, though there is good evidence to show that intestinal infections do sometimes lead to pulmonary tuberculosis.

Journal of Cutaneous Diseases, New York.

August.

98 *Occurrence of a Proliferating Cestode Larva (*Sparganum proliferum*) in Man in Florida. C. W. Stiles, Somerville, Mass.
99 Cholitis Exfoliativa. M. L. Ravitch, Louisville, Ky.

98. Abstracted in The Journal, Oct. 12, 1907, p. 1305.

Denver Medical Times and Utah Medical Journal, Denver.

August.

100 Typhoid Fever. E. Stuver, Ft. Collins, Colo.
101 Postoperative Intestinal Obstruction. F. C. Buchtel, Denver.
102 Recent Interesting Surgical Cases. F. Finney, La Junta, Colo.
103 Phlebitis Following Abdominal Operations. A. H. Harris, Denver.
104 New Dressing for Fractured Clavicle. J. Lindahl, Denver.

Mississippi Medical Journal, Vicksburg.

August.

105 Chloroform and Ether Anesthesia. O. N. Arrington, Brookhaven.
106 What Remedies Shall We Use? H. C. Buck, Friars Point.
107 Typhoid Fever. A. P. Alexander, Sledge.

St. Louis Medical Review.

August.

108 Review of Serum Anaphylaxis. R. L. Thompson, St. Louis.
109 Can the Aged Prostatic be Prevented? J. L. Boogher, St. Louis.
110 Large Dermoid Cyst of Ovary with Carcinomatous Degeneration Involving One-Third of the Bladder: Extirpation: Recovery. J. F. Menestrina, St. Louis.

Journal of Advanced Therapeutics, Rahway, N. J.

August.

111 Case of Lupus, Showing the Effects of Treatment of Concentrated White Light. F. Barrett, Westbrook, Maine.
112 Removal of Superfluous Hair by the X-Ray. F. A. Bardwell, Boston.
113 Treatment of Various Conditions with Static Electricity and High Potential Currents. T. H. Cannon, Baltimore.

American Journal of Urology, New York.

August.

114 Interesting and Obscure Cases. L. W. Bremerman, Chicago.
115 Case of Orchidopexia by Hahn's Method. Joseph Budde, Two Harbors, Minn.

Western Medical Review, Omaha, Neb.

August.

116 Induction of Labor. C. W. Pollard, Omaha.
117 Malignant Endocarditis. R. W. Bliss, Omaha.
118 Bier's Hyperemia. C. W. M. Poynter, Lincoln.
119 Adding a Grain of Salt to Professional Ethics. C. J. Alger, Leigh.

American Practitioner and News, Louisville.

August.

120 Treatment of Pneumonia. A. E. Gardner, Louisville.
121 Life Insurance Examiner. O. P. Nuckols, Louisville.
122 Value of Urine in Diagnosis. E. S. Allen, Louisville.
123 Health Bureau Work. G. B. Jenkins, Louisville.

Journal of the South Carolina Medical Association, Greenville.

August.

124 Case of Torsion of the Omentum. T. P. Whaley, Charleston.
125 Proposed Work of the South Carolina Antituberculosis League. A. B. Patterson, Barnwell.
126 Nervous Manifestations of Gastrointestinal Indigestion. J. C. Sosnowski, Charleston.
127 Tuberculosis in State Prison. F. W. P. Butler, Columbia.

Journal of the Kansas Medical Society, Kansas City.

August.

128 Pseudoleukemia. H. W. Manning, Eureka.
129 Gastrointestinal Neuroses. W. R. Heylmun, Iola.
130 Gunshot Wound of Abdomen. W. S. Grisell, Ransom.
131 Treatment of Fractures of the Leg G. P. Marner, Marion.
132 Acute Glaucoma. J. G. Dorsey, Wichita.

Alabama Medical Journal, Birmingham.

August.

133 Sacroiliac Strain. E. L. Scott, Birmingham.
134 Lead Poisoning. Z. B. Chamblee, North Birmingham.
135 Conservative Surgery of the Ovaries and Tubes. E. M. Robinson, Birmingham.
136 Autointoxication. W. D. Partlow, Tuscaloosa.
137 Fused or Horseshoe Kidney. B. Robinson, Chicago.
138 Tetany. G. L. Faucett, Gadsden.

Bulletin of the Johns Hopkins Hospital, Baltimore.

August.

139 Organs of Respiration. W. G. MacCallum, Baltimore.
140 Right Mesojejunal Hernia. W. G. MacCallum and R. T. Miller, Baltimore.
141 Abnormalities of the Pulmonary Blood Vessels. C. R. Meloy, Baltimore.
142 Tuberculosis of the Stomach; T f the Liver; with Report of a Case. imore.
143 Case of Sigmoid Kidney. M. C.
144 Relation of Bronchial Stenosis to Bronchiectasis. W. L. Thornton and J. P. Pratt, Baltimore.
145 Occurrence of Newly ssels in Malignant Growths, with Origin and Ingrowth in the Metast Sarcoma. H. M. Evans, Baltimore.
146 Effects of Feeding Animals on an Iodine-Free Diet. A. R. Dochez, Baltimore.
147 Changes in the Pancreatic Duct and Their Relation to Chronic Pancreatitis. M. C. Winternitz, Baltimore.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London.

August 29.

1 *Student's Number.

1. This number of the *Lancet* contains no original articles, but is devoted entirely to information concerning medical education and practice in the British Empire. In addition to an address of counsel to students it contains a statement of the powers and duties of the General Medical Council, the regulations and requirements of all the medical examining bodies throughout the United Kingdom, a list of scholarships awarded by the various schools in aid of medical study, the regulations for the government medical services, the requirements for the various diplomas in state medicine and public health, and the regulations for diplomas in dentistry. There is also a review of the conditions under which British (and in some cases, no doubt, other) practitioners are permitted to practice in various foreign countries.

British Medical Journal, London.

August 29.

2 Significance of Some of the Symptoms of Appendicitis from Point of View of Urgency of Operation. C. M. Moullin.
3 Fibrolysin in Cicatricial Pyloric Obstruction. M. B. Steuart.
4 Case of Acute Intestinal Obstruction in a Hemophilic. B. H. Kingsford.
5 *Points in the Anatomy and Pathology of the Hernial Sac. E. S. Carmichael.
6 *Treatment of Chronic Empyema by Hyperemia and Hypertransudation. J. S. Dick.
7 *Smoke Abatement. H. A. Des Voeux.
8 National Military Service and National Physique. J. E. Barker.
9 *Administrative Treatment of Phthisis. A. Walker.
10 Coordination in Pathology and Public Health. F. G. Bushnell.
11 Death Certification and Death Verification. J. B. James.
12 Infant Mortality. S. G. Moore and A. E. Naish.
13 State Regulation of Proprietary Medicines and Foods. G. E. Prichard.
14 *Hampton Interpretation of the Operation of Sewage Purification. G. L. Travis.
15 Lodging Houses Under the Public Health Acts Amendment Act, 1907. J. C. McWalter.
16 The Causes of Dyspnea. J. S. Haldane.
17 Pulmonary Ventilation in Disease. A. P. Beddard and M. S. Pembrey.
18 Changes in the Pituitary Body After Removal of the Thyroid. P. T. Herring.
19 Pancreatic Juice and Glycosuria. J. S. Goodall and H. G. Earle.
20 Suggestion in Its Physiologic Bearings. R. J. Anderson.
21 Appetite: an Attempted Analysis of the Physiologic Factor. J. S. Goodall.
22 Teaching and Examination in Anatomy. C. Addison and David Waterston.
23 Mechanism of Respiration in Health and Disease. A. Keith.
24 Meso-photography and Its Application to Delicate Unfixed Embryos. C. J. Patten.
25 Significance of Fusion of the Atlas to the Occipital Bone, and Manifestation of Occipital Vertebræ. G. E. Smith.
26 The Hard Palate and Maxilla in Primates. R. S. Anderson.
27 Right-handedness. G. E. Smith.

5. **Hernial Sac.**—Carmichael describes a series of observations from which he draws the following conclusions: 1. In early childhood, clinical evidence, gained by examining the spermatic cords of apparently normal children, shows that between 50 and 75 per cent. present thickening due to incomplete closure of the funicular process. 2. The anatomic conditions present in patients operated on support the view of a congenital origin, as shown by the relation of the sac to its coverings, and its presence in spite of a narrow canal and a small external abdominal ring. 3. The histologic and naked-eye appearances of the sac in most cases do not afford reliable evidence of its congenital origin or otherwise, although a markedly thickened sac, if small, is suggestive of the embryonic condition.

6. **Suction Hyperemia in Chronic Empyema.**—Dick reports a case in which, two years from the onset of pneumonia and nine months from the final operation for a subsequent empyema, there was still a cavity having a capacity of over two drams. and secreting over one dram of pus daily. This had been *in statu quo* for three months, so that a cure by drainage was despaired of. An attempt was, therefore, made to increase the transudation of blood to the infected area, as follows: A cupping glass with rubber exhaust was applied. so as to include the sinus and portion of the chest wall bounding the cavity externally. The application at first was rather painful. While the cupping glass was used the patient inflated a football. The cavity was filled daily with sodium citrate chlorid solution recommended by Wright (*Practitioner*, May, 1908; abstracted in THE JOURNAL, July 4, 1908, p. 80) in the article which suggested to the author the use of this plan. [The solution consists of four parts of common salt and one part of sodium citrate dissolved, when required, in 100 parts of boiling water.] An increase in the amount of discharge ensued. Mercury biniodid solution (1 in 2,0 substituted after a week, and the discharge dimi alternation of the two solutions was continued nating increase and diminution of the discharge, end of six weeks the cavity held about ten mini

weeks admitted only a fine probe and was quite dry. While the case is not conclusive, the fact that the condition had been stationary for three months makes it probable that the case is one of those referred to by Godlee, in which the cavity walls having been drawn in to the utmost possible extent, granulation must be relied on to fill the cavity, but owing to tension preventing a continuation of the process, the pleura becomes lined with a perfectly smooth surface secreting pus, but developing no further granulations.

7. **Smoke Abatement.**—Des Voeux discusses the smoke evil and particularly attacks the kitchen chimney. He lauds the use of gas for cooking and points out that its expense is due to wastefulness. In London this has been overcome by the use of a slot system, whereby gas for cooking can be bought by pennyworths at a time. One penny (two cents) in the slot gives from 25 to 30 cubic feet of gas. Of the substitution of gas fires for coal fires, he says that all the objections are due entirely to inadequate gas fitting. A properly constructed gas fire, carefully fitted with a pipe large enough to take away the products of combustion, is sanitarily perfect.

9. **Administrative Treatment of Tuberculosis.**—Walker emphasizes the importance of sanatoriums in the treatment of early cases of phthisis and urges the extension of this treatment to the poorer classes. He discusses the financial aspect of the question.

14. **Sewage Purification.**—Travis essays to show that the purification of sewage by artificial processes has been misunderstood from its inception, and that the phenomena attending it have been wrongly interpreted throughout. His paper is devoted to defining and proving the Hampton interpretation of sewage purification phenomena, which teaches that the purification of sewage is essentially the result of an act of desolution. It affirms that the impurities contained in the sewage, whether in suspension or in a condition of solution, are by this operation, as a preliminary effect, removed from the liquid as by a process of precipitation. This initial separation from the sewage of its solid constituents as particulate matters can be shown to occur under all conditions; therefore, it is held to constitute the most important, as it is also the most manifest, effect in every treatment area. He affirms that the correctness of any interpretation of sewage purification phenomena is evidenced by, and is proportional to, the fidelity of its adherence to the following propositions: 1. That the complete operation of sewage purification is a complex one, in which physical, chemical and biolytic—in its widest sense—factors are severally engaged; 2, that the physical operation manifests itself in removing the suspended, and the more highly complex so-called soluble organic, as well as some inorganic, matters from the sewage; 3, that the chemical operation assists the physical in completing the desolution of the liquid, and takes its part in the subsequent changes induced by biolysis; 4, that the biolytic operation is concerned in a very minor degree with the purification of the sewage itself, inasmuch as its effects are almost entirely evidenced by the changes occurring in those substances which have been removed from the sewage, rather than by being associated with those which are contained therein; and 5, that the biologic operations on the deposited and absorbed solids, whether on those arising from the suspended, or on those resulting from the so-called soluble solids, are always attended by huge, only partially reduced, and practically persistent accumulations. The important principles involved in the above enumerated propositions are that the physical and chemical operations of desolution manifest themselves by depriving the sewage of its impurities during the transit of that liquid through the artificial treatment area: and that the biolytic operations never find expression in the complete conversion of the deposited organic matters, nor, indeed, could they do so were the area increased a hundredfold.

Medical Press and Circular, London.

August 26.

28 Treatment by Hyperemia of Bier. Professor Gebele.
9 Public Health and Poor-Law Medical Services. A. D. Edwards.
*Incidence of Pulmonary Tuberculosis in Children of School Age. J. A. Coutts.
Methods of Dealing with Suppuration in the Maxillary Sinus. S. Thomson.

30. **Pulmonary Tuberculosis in School Children.**—Coutts quotes various authors to show that, notwithstanding a consensus of opinion that pulmonary tuberculosis is rarer in children than in adults, there is great variation in opinion as to its absolute frequency in the young. His own experience leads him to regard it as not only comparatively rare, but as exceedingly rare. The rarity of phthisis in children he regards as the one safeguard against the spread of tuberculosis through the agency of schools.

Australasian Medical Gazette, Sydney.

July 20.

32 School Hygiene. J H Evans.
33 Tetanus. A. G. Salter
34 Manifestations of Filariasis as It Appears in Queensland. E S. Jackson.
35 Diphtheria Carriers. W. G. Armstrong.
36 Diphtheria in West Australia. H Cumpston.
37 Curious Case of Urethral Obstruction. H. C. Hinder.
38 Three Interesting Intestinal Cases. E. H. Binney.
39 Sarcomatous Tumor of Ileum, Removed by Resection of Bowel and End-to-End Anastomosis by Suture—Recovery. R. Worrall.
40 *Treatment of Inflammation by Passive Congestion. C. MacLauren
41 Calmette's Ocular Reaction. C. Reismann.

40. **Constriction Hyperemia.**—MacLauren gives a practical account, for the practitioner, of the method of using constriction hyperemia. A rubber bandage 2½ inches wide is applied lightly around the limb, well above the inflamed part, so as to slow the venous current without interfering with the arterial inrush. The test of sufficiency is that the limb should show a slight reddening, slightly bluish in parts. At the end of twelve hours the limb should be slightly swollen, and there should be no definite blueness or pain. In acute inflammations the bandage is kept on at first for twenty-two hours, then removed for two hours, the limb being elevated. Treatment should be begun in the early morning. The patient should not go to sleep until it is seen how the limb is going to behave. There should be no pain or inconvenience whatever; these indicate a too tight bandage. The duration of application is decreased daily till the inflammation is entirely well. Its use should be continued for two or three days longer, lest the symptoms break out again. Ten hours is the duration of application at first in chronic inflammations, lengthened by two hours daily until twenty-two hours' application is reached. Except in tuberculous disease, gentle massage is given during the interval. A cupping glass is the easiest mode of application to the breast. A light bandage round the neck is used by Bier in mastoid disease.

Indian Medical Gazette, Calcutta.

August.

42 *Treatment of Leprosy with X-Rays and High-Frequency. E. A. C. Matthews.
43 *Rat Destruction Operations in the Punjab. S. Browning-Smith.
44 Flea-Killing Power of Certain Chemicals. R. D. Saigol.
45 Mode of Spread and Prevention of Plague. A. Buchanan.
46 Enteric Fever in the Native Army G. S. Thomson.

42. **X-Rays in Leprosy.**—Matthews reports seven cases of leprosy treated with the *x*-rays, and says that the results in these cases go to show that exposure to *x*-rays forms a valuable means of treating leprosy in all forms and stages of the disease.

43. **Rat Destruction.**—Browning-Smith describes the methods of rat destruction by poison, traps and infective disease, and discusses their effect on plague. The evidence shows that rat destruction is a procedure of great value for the prevention and mitigation of plague epidemics. It is also a preventive, and has the further advantage in India that it interferes little with the customs and comforts of the people. He prefers trapping, but when that can not be carried out poisoning may be used. It is inadvisable to kill rats in a town by poison when an epidemic is at all widespread or when it is well started in small villages, for the rat epizootic is usually in advance of the epidemic. Trapping should be extended to every town in uninfected districts that is likely to become an important center for diffusing plague infection, should the disease be introduced.

Annales de Gynécologie et d'Obstétrique, Paris.

August, XXXV, No. 5, pp. 449-512.

47 Technic and Benefits of Gynecologic Massage in Treatment of Plastic Infiltration and Pelvic Exudates. Bourcart.
48 Modifications in the Blood in Puerperal Infection. (Modifications globulaires du sang dans l'infection puerpérale.) E. Exchaquet.
49 Three Cases of Long Delay Before Recurrence and Generalization After Incomplete Operations on Mixed Ovarian Cysts. (Retard prolongé des récidives et de la généralisation dans les cas de kystes mixtes des ovaires, malgré la limitation forcée des opérations d'exérèse.) E. Vincent.
50 Hypertrophy of the Clitoris. A. Broca.

Archives des Maladies du Cœur, Paris.

August, I, No. 8, pp. 457-504.

51 Pseudoaneurismal Dilatation of Sinus of Valsalva with Various Malformations of Heart. E. Devic and P. Savy.
52 Hemorrhagic Purpura Following Contusion of Kidney Region. E. Lenoble.

Presse Médicale, Paris.

August 19, XVI, No. 67, pp. 529-536.

53 The Lipoids. H. Iscovesco.
54 Present Status of Serum Treatment of Tetanus. L. Lagane.

August 22, No. 68, pp. 537-544.

55 *Acute Tuberculosis Simulating Typhoid. (Typhobacillose de Landouzy. Diagnostic bactériologique pendant la période d'état.) H. Gougerot.

55. **Acute Tuberculosis Simulating Typhoid.**—The clinical aspect of Landouzy's typhobacillosis is that of some form of typhoid, the absence of rose spots being almost the only distinguishing feature: and even the spots were present in ten of Landouzy's first series of 200 cases. Certainty of diagnosis is obtained only by inoculation of animals with blood or with the sediment from centrifugated urine. This typhobacillosis terminates fatally during the acute period or it may end in apparent recovery with localization of the tuberculous process; only exceptionally is the outcome a complete cure. Recurrence has sometimes been observed. Gougerot has been able to reproduce the syndrome in its various types in rabbits by inoculation in the vein of the ear with bird bacilli and homogeneized human bacilli. He has thus reproduced even the type which develops in two stages, and also the definitely curable type. In the clinic, the impending second phase imposes the necessity for extra careful supervision of the convalescence to prevent localization of the tuberculosis. This type of typhobacillosis is so frequent that it should be borne in mind in every case of typhoid.

Archiv für Gynaekologie, Berlin.

LXXXVI, No. 1, pp. 1-253. Last indexed, August 15, p. 630.

56 Placenta Tumor. A. Ravano.
57 Case of Thoracopagus Tetrabrachius. H. v. Oeynhausen.
58 *Duodenal Occlusion. (Duodenalverschluss.) B. Rosenthal.
59 *Importance of Hemolytic Streptococci in Puerperal Infection. (Bedeutung der hämolytischen Streptokokken für die puerperale Infection.) T. Heyemann.
60 Histology of Hydatidiform Mole. (Histologie der Blasenmole.) F. Daels.
61 Influence of Gravity on Production of Frontal Presentation. (Einfluss der Schwerkraft auf die Entstehung der Schädellagen.) L. Seitz.
62 Pathology and Therapy of Chondrodystrophic Dwarf Pelvis. (Chondrodystrophischen Zwergbecken.) F. Engelmann.
63 *Mutual Relations of Diabetes and Pregnancy. (Zuckerkrankheit und Schwangerschaft in ihren Wechselbeziehungen.) H. Offergeld.
64 Ovarian Pregnancy Terminating in Formation of Lithopedion. (Ausgetragene Ovarialschwangerschaft mit Ausgang in Lithokelyphopädionbildung.) W. Weibel.
65 Spontaneous Childbirth with Narrow Pelvis. (Zur Spontangeburt bei engem Becken. und zu Baisch. Reformen in der Therapie des engen Beckens.) T. Leisewitz.

58. **Duodenal Occlusion Curable by Posture.**—Rosenthal adds two more to the few cases on record in which menacing postoperative ileus was arrested as if by magic by turning the patient on his stomach. The occlusion is the result of traction on the mesentery of the small intestine, which drags down with it the superior mesenteric artery as it crosses over the duodenum. The probable mechanism of the occlusion is discussed in detail and a number of cases from the literature are summarized in which a retrospective diagnosis of this trouble can be made. The case reported throws unusual light on the mechanism of the condition, confirming the secondary nature of the dilatation of the stomach as also the magical efficacy of assuming the prone position. The first symptom with occlusion of the duodenum from this cause is intense thirst. The fluid excreted by the stomach in such large amounts can not be passed along into the intestine to be reabsorbed, on account of the high occlusion of the duodenum. For this reason the thirst is more extreme than with ileus from other causes. Then comes vomiting, sometimes recurring every five minutes, at other times with intervals of four or five hours or more. A characteristic feature is that large amounts are vomited while the stomach keeps constantly full of fluid. The vomit is first yellow, then greenish, then dark green and finally almost black. This of itself suggests occlusion below the papilla. When the stomach keeps constantly filling up again with the bile-impregnated fluid there must be either stenosis of the duodenum below the papilla or some abnormal communication between the stomach and the bile passages. The vomit smells sour, never feculent. Hydrochloric acid can not be detected, but pancreatic juice is always to be found in the stomach when it contains bile unless the pancreas functioning is deranged or its outlet is occluded. The temperature remains normal until the autointoxication increases. The pulse is accelerated and small, but this is from the frequent vomiting—referable to irritation of the vagus. Clay-colored stools and flatus pass under the influence of enemas. The urine is reduced in amount and contains exceptional proportions of indican. The abdomen is generally distended in the epigastrium, but elsewhere is normal until the dilatation of the stomach increases. Sometimes the abdomen is retracted; it is not tender anywhere except in the epigastrium, and there only to a slight extent. The general condition grows rapidly grave. The patient feels weak and depressed from the frequent vomiting and tormented by the intense thirst which is only transiently relieved by saline infusion. The eyes are sunken, the tongue dry, the skin gray and flabby—the whole body showing the effects of the lack of water. The immediate recovery when the patient is turned on his stomach has never failed when the condition was differentiated in time and proper treatment applied. In some cases on record the patients recovered after lavage of the stomach and raising the pelvis—the relief probably being due to subsidence of traction on the mesentery as the pelvis was raised. If lavage of the stomach is undertaken it might be wise to pour some castor oil into the stomach to promote recovery by increasing peristalsis. If the prone position brings no relief, Rosenthal advises before resorting to another laparotomy to place the patient across the bed, in the knee-chest position, and try to manipulate the small intestine so as to release it from the small pelvis. If this can not be done the abdomen must be opened and the root of the mesentery loosened. The suggestion has been made that some of the loops of the small intestine might be fastened to prevent the intestine's slipping down again into the small pelvis. Albrecht's method of shutting off the small pelvis from the abdominal cavity might also prove useful, or tamponing. As a last resort, gastroenterostomy may be necessary, but none of the patients thus treated recovered.

59. **Hemolytic Streptococci in Puerperal Infection.**—Heynemann endorses the great practical value of discovery of hemolytic properties in the streptococci in puerperal infection as a sign of extra virulence on the part of the germs. The nonhemolytic streptococci were found only in the cases of milder infection, in his experience. A single examination of the streptococci found in the vaginal and uterine secretions is thus liable to solve the question as to the seriousness of the infection observed, and thus afford indications for treatment.

63. **Diabetes and Pregnancy.**—Offergeld reports two cases of pregnancy in diabetic women. One of the patients succumbed during delivery; the other passed through the childbirth without much disturbance. He has been able to collect from the literature 63 cases of *pregnancy occurring in diabetics* or of diabetes developing in the course of a pregnancy, which he tabulates for comparison. Of the 57 women, 17 died in coma in connection with the pregnancy, and 14 of the others succumbed in the following thirty months, while nothing is known of the later history of 29 women who survived the pregnancy. The total mortality is thus at least 50 per cent. in thirty months; and the mortality of the children

weeks admitted only a fine probe and was quite dry. While the case is not conclusive, the fact that the condition had been stationary for three months makes it probable that the case is one of those referred to by Godlee, in which the cavity walls having been drawn in to the utmost possible extent, granulation must be relied on to fill the cavity, but owing to tension preventing a continuation of the process, the pleura becomes lined with a perfectly smooth surface secreting pus, but developing no further granulations.

7. **Smoke Abatement.**—Des Voeux discusses the smoke evil and particularly attacks the kitchen chimney. He lauds the use of gas for cooking and points out that its expense is due to wastefulness. In London this has been overcome by the use of a slot system, whereby gas for cooking can be bought by pennyworths at a time. One penny (two cents) in the slot gives from 25 to 30 cubic feet of gas. Of the substitution of gas fires for coal fires, he says that all the objections are due entirely to inadequate gas fitting. A properly constructed gas fire, carefully fitted with a pipe large enough to take away the products of combustion, is sanitarily perfect.

9. **Administrative Treatment of Tuberculosis.**—Walker emphasizes the importance of sanatoriums in the treatment of early cases of phthisis and urges the extension of this treatment to the poorer classes. He discusses the financial aspect of the question.

14. **Sewage Purification.**—Travis essays to show that the purification of sewage by artificial processes has been misunderstood from its inception, and that the phenomena attending it have been wrongly interpreted throughout. His paper is devoted to defining and proving the Hampton interpretation of sewage purification phenomena, which teaches that the purification of sewage is essentially the result of an act of desolution. It affirms that the impurities contained in the sewage, whether in suspension or in a condition of solution, are by this operation, as a preliminary effect, removed from the liquid as by a process of precipitation. This initial separation from the sewage of its solid constituents as particulate matters can be shown to occur under all conditions; therefore, it is held to constitute the most important, as it is also the most manifest, effect in every treatment area. He affirms that the correctness of any interpretation of sewage purification phenomena is evidenced by, and is proportional to, the fidelity of its adherence to the following propositions: 1. That the complete operation of sewage purification is a complex one, in which physical, chemical and biolytic—in its widest sense—factors are severally engaged; 2, that the physical operation manifests itself in removing the suspended, and the more highly complex so-called soluble organic, as well as some inorganic, matters from the sewage; 3, that the chemical operation assists the physical in completing the desolution of the liquid, and takes its part in the subsequent changes induced by biolysis; 4, that the biolytic operation is concerned in a very minor degree with the purification of the sewage itself, inasmuch as its effects are almost entirely evidenced by the changes occurring in those substances which have been removed from the sewage, rather than by being associated with those which are contained therein; and 5, that the biologic operations on the deposited and absorbed solids, whether on those arising from the suspended, or on those resulting from the so-called soluble solids, are always attended by huge, only partially reduced, and practically persistent accumulations. The important principles involved in the above enumerated propositions are that the physical and chemical operations of desolution manifest themselves by depriving the sewage of its impurities during the transit of that liquid through the artificial treatment area; and that the biolytic operations never find expression in the complete conversion of the deposited organic matters, nor, indeed, could they do so were the area increased a hundredfold.

Medical Press and Circular, London.

August 26.

28 Treatment by Hyperemia of Bier. Professor Gebele.
29 Public Health and Poor-Law Medical Services. A. D. Edwards.
30 *Incidence of Pulmonary Tuberculosis in Children of School Age. J. A. Coutts.
31 Methods of Dealing with Suppuration in the Maxillary Sinus. S. Thomson.

30. **Pulmonary Tuberculosis in School Children.**—Coutts quotes various authors to show that, notwithstanding a consensus of opinion that pulmonary tuberculosis is rarer in children than in adults, there is great variation in opinion as to its absolute frequency in the young. His own experience leads him to regard it as not only comparatively rare, but as exceedingly rare. The rarity of phthisis in children he regards as the one safeguard against the spread of tuberculosis through the agency of schools.

Australasian Medical Gazette, Sydney.

July 20.

32 School Hygiene. J H Evans.
33 Tetanus. A. G. Salter.
34 Manifestations of Filariasis as It Appears in Queensland. E S. Jackson.
35 Diphtheria Carriers. W. G. Armstrong.
36 Diphtheria in West Australia. H Cumpston.
37 Curious Case of Urethral Obstruction. H. C. Hinder.
38 Three Interesting Intestinal Cases. E. H. Binney.
39 Sarcomatous Tumor of Ileum, Removed by Resection of Bowel and End-to-End Anastomosis by Suture—Recovery. R. Worrall.
40 *Treatment of Inflammation by Passive Congestion. C. MacLauren.
41 Calmette's Ocular Reaction. C. Reismann.

40. **Constriction Hyperemia.**—MacLauren gives a practical account, for the practitioner, of the method of using constriction hyperemia. A rubber bandage 2½ inches wide is applied lightly around the limb, well above the inflamed part, so as to slow the venous current without interfering with the arterial inrush. The test of sufficiency is that the limb should show a slight reddening, slightly bluish in parts. At the end of twelve hours the limb should be slightly swollen, and there should be no definite blueness or pain. In acute inflammations the bandage is kept on at first for twenty-two hours, then removed for two hours, the limb being elevated. Treatment should be begun in the early morning. The patient should not go to sleep until it is seen how the limb is going to behave. There should be no pain or inconvenience whatever: these indicate a too tight bandage. The duration of application is decreased daily till the inflammation is entirely well. Its use should be continued for two or three days longer, lest the symptoms break out again. Ten hours is the duration of application at first in chronic inflammations, lengthened by two hours daily until twenty-two hours' application is reached. Except in tuberculous disease, gentle massage is given during the interval. A cupping glass is the easiest mode of application to the breast. A light bandage round the neck is used by Bier in mastoid disease.

Indian Medical Gazette, Calcutta.

August.

42 *Treatment of Leprosy with X-Rays and High-Frequency. E. A. C. Matthews.
43 *Rat Destruction Operations in the Punjab. S. Browning-Smith.
44 Flea-Killing Power of Certain Chemicals. R. D. Saigol.
45 Mode of Spread and Prevention of Plague. A. Buchanan.
46 Enteric Fever in the Native Army G. S. Thomson.

42. **X-Rays in Leprosy.**—Matthews reports seven cases of leprosy treated with the *x*-rays, and says that the results of these cases go to show that exposure to *x*-rays forms a valuable means of treating leprosy in all forms and stages of the disease.

43. **Rat Destruction.**—Browning-Smith describes the methods of rat destruction by poison, traps and infective disease, and discusses their effect on plague. The evidence shows that rat destruction is a procedure of great value for the prevention and mitigation of plague epidemics. It is also a preventive, and has the further advantage in India that it interferes little with the customs and comforts of the people. He prefers trapping, but when that can not be carried out poisoning may be used. It is inadvisable to kill rats in a town by poison when an epidemic is at all widespread or when it is well started in small villages, for the rat epizootic is usually in advance of the epidemic. Trapping should be extended to every town in uninfected districts that is likely to become an important center for diffusing plague infection, should the disease be introduced.

Annales de Gynécologie et d'Obstétrique, Paris.

August, XXXV, No. 5, pp. 449-512.

47 Technic and Benefits of Gynecologic Massage in Treatment of Plastic Infiltration and Pelvic Exudates. Bourcart.
48 Modifications in the Blood in Puerperal Infection. (Modifications globulaires du sang dans l'infection puerpérale.) E. Exchaquet.
49 Three Cases of Long Delay Before Recurrence and Generalization After Incomplete Operations on Mixed Ovarian Cysts. (Retard prolongé des récidives et de la généralisation dans les cas de kystes mixtes des ovaires, malgré la limitation forcée des opérations d'exérèse.) E. Vincent.
50 Hypertrophy of the Clitoris. A. Broca.

Archives des Maladies du Cœur, Paris.

August, I, No. 8, pp. 457-504.

51 Pseudoaneurismal Dilatation of Sinus of Valsalva with Various Malformations of Heart. E. Devic and P. Savy.
52 Hemorrhagic Purpura Following Contusion of Kidney Region. E. Lenoble.

Presse Médicale, Paris.

August 19, XVI, No. 67, pp. 529-536.

53 The Lipoids. H. Iscovesco.
54 Present Status of Serum Treatment of Tetanus. L. Lagane.

August 22, No. 68, pp. 537-544.

55 *Acute Tuberculosis Simulating Typhoid. (Typhobacillose de Landouzy. Diagnostic bactériologique pendant la période d'état.) H. Gougerot.

55. **Acute Tuberculosis Simulating Typhoid.**—The clinical aspect of Landouzy's typhobacillosis is that of some form of typhoid, the absence of rose spots being almost the only distinguishing feature: and even the spots were present in ten of Landouzy's first series of 200 cases. Certainty of diagnosis is obtained only by inoculation of animals with blood or with the sediment from centrifugated urine. This typhobacillosis terminates *fatally during the acute period or it may end in* apparent recovery with localization of the tuberculous process; only exceptionally is the outcome a complete cure. Recurrence has sometimes been observed. Gougerot has been able to reproduce the syndrome in its various types in rabbits by inoculation in the vein of the ear with bird bacilli and homogeneized human bacilli. He has thus reproduced even the type which develops in two stages, and also the definitely curable type. In the clinic, the impending second phase imposes the necessity for extra careful supervision of the convalescence to prevent localization of the tuberculosis. This type of typhobacillosis is so frequent that it should be borne in mind in every case of typhoid.

Archiv für Gynaekologie, Berlin.

LXXXVI, No. 1, pp. 1-253. Last indexed, August 15, p. 630.

56 Placenta Tumor. A. Ravano.
57 Case of Thoracopagus Tetrabrachius. H. v. Oeynhausen.
58 *Duodenal Occlusion. (Duodenalverschluss.) B. Rosenthal.
59 *Importance of Hemolytic Streptococci in Puerperal Infection. (Bedeutung der hämolytischen Streptokokken für die puerperale Infection.) T. Heyemann.
60 Histology of Hydatidiform Mole. (Histologie der Blasenmole.) F. Daels.
61 Influence of Gravity on Production of Frontal Presentation. (Einfluss der Schwerkraft auf die Entstehung der Schädellagen.) L. Seitz.
62 Pathology and Therapy of Chondrodystrophic Dwarf Pelvis. (Chondrodystrophischen Zwergbecken.) F. Engelmann.
63 *Mutual Relations of Diabetes and Pregnancy. (Zuckerkrankheit und Schwangerschaft in ihren Wechselbeziehungen.) H. Offergeld.
64 Ovarian Pregnancy Terminating in Formation of Lithopedion. (Ausgetragene Ovarialschwangerschaft mit Ausgang in Lithokelyphopädionbildung.) W. Weibel.
65 Spontaneous Childbirth with Narrow Pelvis. (Zur Spontangeburt bei engem Becken. und zu Baisch. Reformen in der Therapie des engen Beckens.) T. Leisewitz.

58. **Duodenal Occlusion Curable by Posture.**—Rosenthal adds two more to the few cases on record in which menacing postoperative ileus was arrested as if by magic by turning the patient on his stomach. The occlusion is the result of traction on the mesentery of the small intestine, which drags down with it the superior mesenteric artery as it crosses over the duodenum. The probable mechanism of the occlusion is discussed in detail and a number of cases from the literature are summarized in which a retrospective diagnosis of this trouble can be made. The case reported throws unusual light on the mechanism of the condition, confirming the secondary nature of the dilatation of the stomach as also the magical efficacy of assuming the prone position. The first symptom with occlusion of the duodenum from this cause is intense thirst. The fluid excreted by the stomach in such large amounts can not be passed along into the intestine to be reabsorbed, on account of the high occlusion of the duodenum. For this reason the thirst is more extreme than with ileus from other causes. Then comes vomiting, sometimes recurring every five minutes, at other times with intervals of four or five hours or more. A characteristic feature is that large amounts are vomited while the stomach keeps constantly full of fluid. The vomit is first yellow, then greenish, then dark green and finally almost black. This of itself suggests occlusion below the papilla. When the stomach keeps constantly filling up again with the bile-impregnated fluid there must be either stenosis of the duodenum below the papilla or some abnormal communication between the stomach and the bile passages. The vomit smells sour, never feculent. Hydrochloric acid can not be detected, but pancreatic juice is always to be found in the stomach when it contains bile unless the pancreas functioning is deranged or its outlet is occluded. The temperature remains normal until the autointoxication increases. The pulse is accelerated and small, but this is from the frequent vomiting—referable to irritation of the vagus. Clay-colored stools and flatus pass under the influence of enemas. The urine is reduced in amount and contains exceptional proportions of indican. The abdomen is generally distended in the epigastrium, but elsewhere is normal until the dilatation of the stomach increases. Sometimes the abdomen is retracted; it is not tender anywhere except in the epigastrium, and there only to a slight extent. The general condition grows rapidly grave. The patient feels weak and depressed from the frequent vomiting and tormented by the intense thirst which is only transiently relieved by saline infusion. The eyes are sunken, the tongue dry, the skin gray and flabby—the whole body showing the effects of the lack of water. The immediate recovery when the patient is turned on his stomach has never failed when the condition was differentiated in time and proper treatment applied. In some cases on record the patients recovered after lavage of the stomach and raising the pelvis—the relief probably being due to subsidence of traction on the mesentery as the pelvis was raised. If lavage of the stomach is undertaken it might be wise to pour some castor oil into the stomach to promote recovery by increasing peristalsis. If the prone position brings no relief, Rosenthal advises before resorting to another laparotomy to place the patient across the bed, in the knee-chest position, and try to manipulate the small intestine so as to release it from the small pelvis. If this can not be done the abdomen must be opened and the root of the mesentery loosened. The suggestion has been made that some of the loops of the small intestine might be fastened to prevent the intestine's slipping down again into the small pelvis. Albrecht's method of shutting off the small pelvis from the abdominal cavity might also prove useful, or tamponing. As a last resort, gastroenterostomy may be necessary, but none of the patients thus treated recovered.

59. **Hemolytic Streptococci in Puerperal Infection.**—Heynemann endorses the great practical value of discovery of hemolytic properties in the streptococci in puerperal infection as a *sign of extra virulence on the part of the germs.* The nonhemolytic streptococci were found only in the cases of milder infection, in his experience. A single examination of the streptococci found in the vaginal and uterine secretions is thus liable to solve the question as to the seriousness of the infection observed, and thus afford indications for treatment.

63. **Diabetes and Pregnancy.**—Offergeld reports two cases of pregnancy in diabetic women. One of the patients succumbed during delivery; the other passed through the childbirth without much disturbance. He has been able to collect from the literature 63 cases of pregnancy occurring in diabetics or of diabetes developing in the course of a pregnancy, which he tabulates for comparison. Of the 57 women, 17 died in coma in connection with the pregnancy, and 14 of the others succumbed in the following thirty months, while nothing is known of the later history of 29 women who survived the pregnancy. The total mortality is thus at least 50 per cent. in thirty months: and the mortality of the children is still

higher, over 66.6 per cent. In the 25 cases in which the fetus had died, the death of the mother followed in 17 cases. On account of the occasional cases in which a diabetic woman seems to pass unscathed through the pregnancy, treatment must be strictly individualized. The indications are the same as outside of diabetes in regard to management of the pregnancy. In 10 of the total 63 cases hydramnios was observed, requiring artificial termination of the pregnancy in 4 cases. It is notable, however, that vicious presentations and post partum hemorrhage were not often observed with the hydramnios under these conditions. The physician should be prepared to terminate the pregnancy at any moment if serious symptoms develop. Efforts must be made to counteract the chronic deficient nourishment in pregnancy and the consequent injury of the liver, this is best accomplished by interruption of the pregnancy, but if coma has already developed, it is too late, as a rule. In 3 of the cases on record the coma did not prove fatal and improvement followed although transient. If delivery occurs during coma, it should be hastened in every way, the fetus succumbs inevitably if the mother has coma. It generally develops during or soon after the childbirth, and it is still an open question whether a carefully induced premature delivery is more of a strain on the woman's organism than delivery at term when the organism has been under the influence of the diabetes for the additional months. In any event, Offergeld concludes the fear of eventual development of coma should not deter from inducing premature delivery if it is otherwise indicated. The entire 63 cases are summarized and analyzed from various points of view.

Archiv fur Verdauungs Krankheiten, Berlin

August 12, XIV, No 4, pp 349-478

66 *Fistula Between Lung and Esophagus. (Lungen Speiseröhren fistein.) F Pachnio.
67 Lack of Connection Between Proportion of Indican in the Urine and Indol in the Stools. (Mangel von Relation zwischen Harnindikan und Kotindol.) W v Moraczewski.
68 Three Cases of Benign Stenosis of Pylorus Simulating Gall stone Affections. (Fälle von Ischochymie Gallensteinerkrankung vortäuschend.) M Einhorn.
69 *Standards for Proportions of Constituents of Normal Stools. (Zur Lehre von den Abführmitteln.) H Ury.
70 *Functional Stomac … is of Stomach (Bedeutung der … für die Diagnose des Ulcus … Commenced in No 3.

66 **Fistula Between the Lung and Esophagus.**—Pachnio reports a case in which an old tuberculous process in the lung had caused morbid changes in the surrounding tissues which then healed, in healing the esophagus was involved in the cicatricial retraction and this resulted in the formation of a diverticulum. The process in the lung continued, with ultimate perforation of the cavity into the diverticulum. The case was distinguished by its exceptionally chronic course.

69 **Standards for Constituents of Normal Stools.**—Ury's article is the first of a series on the action of purgatives. This one treats of the secretions and residue of food in normal stools. It issues from the chemical laboratory of the Pathologic Institute at Berlin, in charge of Salkowski. The Schmidt test diet is the basis of the research, slightly simplified. The main features of this test diet are restriction to from 0.5 up to 1.5 liters of milk, 100 gm white bread (rolls, zwieback or crackers), from 100 to 200 gm potato soup, and a quarter of a pound of chopped beef, of which part, at least, is raw or nearly raw. It is not necessary to measure the amount of butter, sugar, oatmeal, coffee or wine. The test diet thus modified is not difficult to enforce, and it is sufficiently uniform for purposes of research on the stools. The results of the research reported show that aqueous extraction of the normal stools allows only secretions to pass into the filtrate. The articles of food which the digestive processes have dissolved are absorbed to the last particle, with the consequence that none of these dissolved substances passes into the filtrate. He tabulates the averages of the findings from repeated tests on five normal subjects, and gives the average of the five as standards which can be used for comparison with pathologic conditions. The standards for the aqueous extract of 100 grams of absolutely dried solids are 14.784 dried solids, 1.0483 nitrogen, 4.552 ash, 0.3941 calcium, 0.10249 chlorin, 0.0293 sulphuric acid, 3.3580 potassium chlorid plus sodium chlorid.

70 **Functional Tests for Diagnosis of Gastric Ulcer.**—Borgbjærg announces the following as the conclusions of extensive research: 1. Microscopic stagnation twelve hours after a test supper is decided evidence of the presence of an organic stomach trouble, as a rule, it is an ulcer (or carcinoma), but it may be chronic gastritis. 2. If with this stagnation of microscopic nature there is secretion of hydrochloric acid in the fasting stomach, the presence of an ulcer is still more probable. 3. If with continuous hypersecretion and microscopic stagnation there is a macroscopic stagnation—even very slight or occurring only at intervals, or if there is insufficiency of the first degree (atony), an ulcer is certainly present. 4. Continuous hypersecretion is strong evidence of the presence of a gastric ulcer. As this is almost invariably accompanied with microscopic stagnation, it will seldom be found necessary to base the diagnosis of gastric ulcer on the hypersecretion alone. The presence of a hydrochloric secretion in the fasting stomach—even in very small amounts—should always direct attention to the stomach, and if other symptoms point to the stomach, the hypersecretion indicates that these gastric disturbances are due to gastric ulcer. He believes that atony of the stomach is not an idiopathic trouble of nervous origin but that it is usually or possibly always—like ectasia—a symptom of organic trouble, and most frequently of an ulcer. The atony may lead to ectasia, but as a rule atony is found with an ulcer located outside the pylorus, while ectasia is observed with ulcer at the pylorus. The ulcer in the pylorus is usually circular or semicircular, and, as it heals the cicatricial retraction draws up the lumen of the pylorus. Not every ulcer is accompanied by ectasia or atony. With the ulcer at the pylorus the musculature of the antrum may be vigorous enough to force the chyme through the partially obstructed pylorus. If the ulcer is in the antrum, then musculature suffers and atony results, but, as the pylorus is intact, the stomach empties itself and dilatation does not follow. When the ulcer involves both antrum and pylorus, then if the stenosis is but slight there may be great insufficiency as the expelling force is enfeebled. If an ulcer in the antrum spreads to the pylorus, the atony may be followed by ectasia. He adds that as continuous hypersecretion is frequently referable to an ulcer, so alimentary and digestive hypersecretion may be produced by an ulcer—the continuous hypersecretion may be merely a long continued digestive hypersecretion. He is convinced that digestive hypersecretion is a symptom of ulcer. Whether or not it may come from other causes is a question to be decided by future researches.

Beitrage zur klinischen Chirurgie, Tubingen.

July, LIX, No 1, pp 1-234

71 *Hydatid Disease in Long Bones. (Echinokokken der langen Röhrenknochen.) A Reich.
72 *Tuberculous Pyonephrosis without Outward Manifestations. (Geschlossene tuberkulose Pyonephrose.) R Krauss.
73 *Primary Tuberculosis of Mesenteric Glands. (Primäre Tuberkulose der mesenterialen Lymphdrüsen.) H Mächtle.
74 *Spondylitic Abscesses in Posterior Mediastinum. E Finckh.
75 Apparatus to Collect Urine After Operations on Bladder. (Nachbehandlung der suprapubischen Cystotomie.) Id.
76 *True Fractures of Neck of Femur in the Young. (Echte Schenkelhalsfrakturen im kindlichen und jugendlichen Alter.) O Haldenwang.
77 *Injuries of Ankle Region Especially of Scaphoid Bone. (Verletzungen im Bereiche der Fusswurzelknochen mit besonderer Be… … rer
78 * … of … Saar
79 … (… ethra (Divertikel der männlic…
80 Plastic Operations on Penis to Remedy Congenital Adherence of Prepuce. (Posthioplastik bei kongenitaler Verwachsung von Vorhaut und Eichel.) F Streissler.
81 Isolated Fracture of Scaphoid Bone. (Isolierte Fraktur des Os naviculare tarsi.) A Hoffmann.
82 Tetany with Chronic Dilatation of the Stomach. (Tetanie bei chronischer Dilatatio ventriculi.) F Brucks.

71 **Echinococcus Affections of the Long Bones.**—Reich summarizes 31 cases of operative treatment of hydatid disease of the long bones including an unpublished one from von Bruns' clinic. The humerus was the seat of the lesion in 12 cases, the tibia in 11, the femur in 5, and there was multiple localization in 3 cases. Of the total 31 patients, 26 were cured, 7 by mutilating operations. The outcome is not known in 2 other cases, 3 patients succumbed to septic complications.

72. Tuberculous Pyonephrosis Without External Manifestations.—Krauss' patient was a woman of 50 who applied for relief from a large tumor in one kidney. The urine was normal on repeated examination and there were no pains. On the assumption of hydronephrosis, the kidney was exposed, and the trouble was found to be a tuberculous process which had transformed most of the kidney into a sac larger than a man's head, with several chambers, with rigid walls, not adherent to its vicinity, and containing three or four quarts of fluid. The patient has been in perfect health since the nephrectomy and has gained 27 pounds during the six months.

73. Primary Tuberculosis of the Mesenteric Glands.—Mächtle's interest was attracted to this subject by a case in a young woman in von Bruns' service at Tubingen. He gives the details of 14 other cases of the kind, in which all the patients were cured by removal of the tuberculous glandular tumor. There was no involvement of the intestine in any of these cases. The first symptoms are attacks of pain, the further development of the tumor causing compression and various digestive disturbances, constipation, vomiting and diarrhea, with emaciation. Palpation reveals a movable, knobby, sensitive abdominal tumor, generally on the right side. This tumor can be separated from the other abdominal organs, and sometimes a stem leading downward into the depths can be recognized. Surgical intervention not only cures the trouble, but removes a dangerous focus from the organism

74. Spondylitic Abscess in the Posterior Mediastinum.—Finckh's case shows the importance for differentiation of Roentgen-ray examination in such cases.

76 True Fracture of the Neck of the Femur in the Young.—Haldenwang reviews 25 cases, including two personally observed. This fracture is rare under the age of 10. He reviews this material in detail, pointing out that consolidation generally occurs, and that appropriate treatment of the still recent fracture gives good prospect of healing in normal position; otherwise coxa vara almost invariably results

77. Injuries in the Region of the Ankle.—Finsterer discusses this subject and gives examples of the various forms of injury and the methods of treatment followed according as the different bones in the region are more or less involved in the injury.

78. Traumatic Abscesses of the Anterior Mediastinum.—Saar tabulates the particulars of nine cases, including one from his own experience. The prognosis of this traumatic abscess is always grave; the outcome depends materially on energetic surgical intervention at the right moment. The diagnosis is sometimes difficult; considerable edema of the anterior wall of the chest and the disturbances in breathing are the most reliable symptoms. Treatment should include resection of some of the costal cartilages or part of the sternum, with copious drainage, if possible with the patient lying prone.

Berliner klinische Wochenschrift.

August 24, XLV, No 34, pp 1557-1592

83 *Relations Between Congenital Muscular Defects, Infantile Disintegration of the Nuclei and Progressive Infantile Dystrophy of the Mu hen angeborenen Muskeldefekten, und Dystrophia muscularis progr
84 Two Cases of Multi ingococcus Meningitis Maschke.
85 Multiple Peritoneal Pseudometastases of an Ovarian Dermoid E Melchior
86 Ocular Tuberculin Reaction. (Weitere Ergebnisse der Conjunctivalreaktion auf Tuberkulose) R. Fabian and H Knopf
87 Deviation of Complement in Scarlet Fever (Komplementablenkung bei Scarlatina) H Boas and G Hauge
88 *Simplification of Jakoby Solms Met Pepsin (methode der
89 Corporal Puni from Neurologic Standpoint (Korperliche Strafen in der Schule) E Forster

83. Relations Between Congenital and Acquired Muscle Defects.—Ziehen discusses this question in connection with a patient of 18 with congenital ophthalmoplegia, hypoglossal and facial paralysis, and absence of the pectoral muscle on the left side He distinguishes between the group of congenital atrophic paralyses or defects and the group of atrophic paralyses which develop on a congenital predisposed soil This group includes infantile progressive bulbar paralysis and mus-

reviews research
cular dystrophy. The two groups are dis taken up by the non-progressive course of the purely congec central nervous stationary course is noticeable, even in casn. According to paralyses in inherited syphilis. He remarks in the greater its injury from a forceps delivery may possibly be tn of the anesof the congenital predisposition in certain caststem is what described shows the necessity for refraining fronithin is supinfantile disintegration of the nuclei in such cases; ten induced. be differentiated by the pathologic anatomic basis. tion with ts with

88. This article also appeared in the *Medical Record*, hesia 29, 1908, and was abstracted in THE JOURNAL, Sept. 12, 1 of p. 944.

Deutsche medizinische Wochenschrift, Berlin.

August 20, XXXIV, No 34, pp 1457-1496.

90 Successful Treatment of Experimental Nagana (Tsetsekrankheit) F Loeffler, K Rühs and E Walter.
91 Determination of Atoxyl in Urine, and Course of Its Elimination. (Nachweis und Gang der Ausscheidung des Atoxyls im Harn) G Lockemann and M Paucke.
92 Present Status of Pneumococcus Serum Treatment of Infecting Corneal Ulcer. (Gegenwartige Stand der Pneumococcenserumtherapie des Ulcus serpens) P. Romer.
93 *Operative Treatment of Hydrocephalus Heile.
94 Relative Eupraxia with Right Hemiplegia. (Relative Eupraxie bei Rechtsgelahmten) Liepmann.
95 *Funnel Shaped Hystereurynter. (Erweiterung des unteren Uterinabschnittes durch einen neuen, verbesserten Konkav-Metreurynter) N. J Macry.

93. Treatment of Hydrocephalus.—Heile has noticed that the iodids were better tolerated in the treatment of hydrocephalus when their administration was preceded by puncture of the ventricle. The effects of single or repeated spinal or ventricular puncture were much better when supplemented with as large doses of potassium iodid internally as possible. The benefit from permanent drainage in many cases rebellious to puncture has led him to attempt to relieve the compression in the skull from the excess of fluid by diverting it elsewhere, especially from the spinal canal into the abdominal cavity. This technic he has applied in one clinical case with promising results Of course it is applicable only when there is free communication between the ventricle and the spinal canal. If the foramen of Magendie is obstructed by the results of inflammation this technic is useless. His patient was a child about a year old from whom a spina bifida had been removed two days after birth He cut a flap on one side of the old scar and drew up a loop of the large intestine. He then incised the dural sac and sutured the serosa of the bowel to the dura; this connected directly the peritoneum and dura, close to the intact spine The pelvis was then raised and the spinal sac compressed to prevent too rapid flow of the cerebrospinal fluid during the operation. An illustration shows the exact technic of the direct serosa communication between the peritoneum and dura The skin flap was replaced and sutured and in the course of the day the circumference of the head grew 3 cm. smaller—similar to the effect after withdrawal of large amounts of fluid by puncture. The child was doing well, the pulse good, but the attendant after 20 hours inadvertently made the child sit up, and the sudden change from the previous position with the pelvis very high caused such a flow of fluid that the child succumbed at once. Heile says that in another case of the kind he would never withdraw more than 40 or 50 c.c. at a time by puncture, preferring to repeat the puncture more frequently In this case he drew each time from 70 to 80 c.c., and he is convinced that this contributed to the debility of the child, from the excessive loss of albumin. His experience on the cadaver has shown that access to the spinal canal is best attained by resection of the coccyx and two lower vertebræ. The peritoneum in the cul de-sac of Douglas is then opened, and the serosa of the peritoneum sutured to the dura, thus providing a serous passage by which the fluid can be diverted into the abdominal cavity. This latter technic avoids danger of injury of important nerves, vessels and organs, as there is nothing of the kind near the coccyx, while the peritoneum is most readily reached at this point, and is opened as for an operation on the rectum.

95. Funnel Hystereurynter.—Macry uses a funnel-shaped hystereurynter into which the child's head slides along the lines of least resistance. It can not slide out again on either side. The article is illustrated.

higher, over 66.6 pe **h für Kinderheilkunde, Berlin.**
had died, the deat *st LXVIII No 2 pp 131 260*
account of the o ons in Body Temperature in Healthy and Sick
Tagesschwankungen der Körpertemperatur beim
seems to pass und beim kranken Säugling) F Gofferje
must be strictly nfant Stomach and Dependence of Its Digesting
a Presence of Hydrochloric Acid (Vorhandensein
as outside of psin im Magen des Säuglings und die Abhängigkeit
nancy In 1 verdauenden Kraft von der Anwesenheit von Salz
) W Reeve Ramsay
requiring a ographic Study of Heart in School Children (Ortho
It is not graphische Herzuntersuchungen bei Kindern im schulp
partum ichtigen Alter) A Veith
dram

Daily Variations in Temperature in Infants.—Gofferje made a study of the temperature in healthy and sick infants. It keeps on a high level plane from 6 a. m. to 6 p. m., with a corresponding low level plane at night, from 10 p. m. to 4 a. m. To be truly instructive the temperature should be recorded uniformly at 2 and 10 a. m. and at 6 p. m. The difference between the day and night plateaux was more marked in the older children, but no difference could be detected between breast children and others thriving on artificial feeding. The temperature in the axilla is that of the muscles and is an index of the innervations of the muscles. From the record of the temperature taken in the axilla it is easy to tell just when the infant awoke, when he lay quietly and when he cried. As the child wakes and grows lively the temperature rises, reaching its height about 10 a. m. The curve drops a little at each nap and rises above the level at each crying spell. Febrile conditions affect the daily variations in three typical ways. The most frequent type is that in which the night reduction does not occur at all or occurs tardily and there are occasional peaks rising above the normal diurnal plane. This is the type in dyspeptic disturbances, in severe alimentary intoxication this type is most pronounced. The peaks become sharper and more frequent but there is no difference between the day and night levels, merely the irregular zigzag of the temperature amounting to actual delirium of the temperature in the severest form of intestinal catarrh. This type is also observed in serum diseases. Curves are given from various affections of this and the other types, all confirming the diagnostic importance of the daily variations in the temperature of infants. In one case, for example, the projecting peaks and the delay in the night decline were observed the second day after a prophylactic injection of diphtheria antitoxin. Nothing else indicated anything wrong, the child slept quietly, but in a day or two an exanthem developed, the peaks rose higher and the temperature did not decline in the least at night. The onset of the serum sickness in this case was revealed early by the temperature curve long before it could be otherwise detected. The second type of changes in the curve in febrile conditions is that in which the temperature line runs night and day horizontal along the day level or moves in waves with no connection with the normal daily variations. This type includes remittent and continuous fevers and this change from the normal type may occur without the temperature surpassing the physiologic limits. When the temperature curve runs in a horizontal line at the level of the day plane this indicates the onset of a febrile condition. In his experience this was always the premonitor of an infectious affection. He calls it *febris continua sine elevatione*. In the beginning of this research the attendants thought something was wrong with the thermometer when the infant was found sleeping quietly at night but with temperature still at the day level, although other conditions seemed to be entirely normal. In a day or so symptoms developed in every such case showing that the absence of the usual night drop was the result of the incipient morbid process. The absence of the nocturnal decline is one element of the febrile syndrome; it seems to be the first phase of continuous fever. In estimating the tuberculin reaction this lack of the nocturnal drop in the temperature must be regarded as the equivalent of fever. The third type of disturbance in the daily variation of temperature is quite rare. The daily variations persist but they are very much exaggerated both upward and downward. It must be borne in mind, he adds, that the glandular organs in infants represent about 6.4 per cent. of the total weight, against 3.8 per cent. in adults, while the muscles represent only 25 per cent., against 4.3 per cent. in adults.

Medizinische Klinik, Berlin.

August 16, IV, No 33 pp 1257-1292

99 *Operative Mobilization of Chest Wall and Lung in Treatment of Unilateral Pulmonary Phthisis (Pneumolysis zwecks Behandlung einseitiger Lungenphthise) P L Friedrich
100 Cerebrospinal Meningitis L Cohn
101 *Hereditary Occurrence of Exophthalmic Goiter (Zum erblichen Auftreten der Basedowschen Krankheit) J Grober
102 Lumbar Puncture in Psychiatric Diagnosis F Chotzen Commenced in No 32
103 Retrograde Incarceration of Intestines (Weiterer Beitrag zur Kenntnis der retrograden Darminkarzeration) E Heller
104 Relations Between Chronic Atrophic Rhinitis and Diphtheria L Wolff
105 Pyocyanase in Ozena Id
106 Composition and Importance of Horny Substances (Zusammensetzung und die Bedeutung der Hornsubstanzen) P G Unna

August 23, No 34, pp 1293 1328

107 Paradysentery and Similar Affections in Children W Knoepfelmacher
108 Abdominal Contusions (Offene und subkutane Verletzungen der Bauchorgane) R Lampe
109 Lupus Erythematodes and Tuberculids in General S Ehrmann and S Reines
110 Color Photographs for Stereoscopic Work (Farbige, stereoskopische Photographie) Kudlich
111 Effectual Balneologic Courses (Wirksame Badekuren) H Zikel
112 Action of Aggressins (Aggressinwirkung) P Ikonnikoff

99 **Operative Treatment of Unilateral Pulmonary Phthisis.**—Friedrich shows how the operative measures previously in vogue have been based on mistaken premises. Puncture, aspiration of contents of cavities and resection of the lung tissue and even general treatment all fail to realize the best effect because the walls of the cavities are rigid and distended. The mechanical conditions of the cavities interpose resistance to the healing process. Study of spontaneous healing of cavities in children shows that the cavity shrinks and the lung shrivels and with this the pleural cavity contracts and the chest sinks in. In children thus every change in shape and size of the lungs brings a corresponding change in the shape of the pleural cavity and possibly of the chest. By cutting away all the ribs over the lung with the tough muscles the chest wall becomes soft and yielding. Nature's method of healing is imitated and promoted. The aim is to allow the affected lung to be compressed toward the hilus without the development of pneumothorax. Friedrich proposes the term "pneumolysis" for this technic and relates promising results from it in the hands of Brauer, Frey, Spengler, Turban and von Muralt. The patients were all between the ages of 19 and 45, with predominant unilateral processes constantly progressing, under observation for years, refractory to all medicinal and climatic therapy. Nearly all had been in a febrile state for weeks or months. All expectorated from 120 to 200 or more c.c. sputum containing bacilli. As the aim was to mobilize the wall to the utmost possible extent the ribs were cut away from their cartilage to the spine—removing the second to tenth ribs inclusive, refraining from the slightest injury of the costal pleura. About 200 cm. of ribs are thus resected in from 20 to 25 minutes and with them the entire intercostal musculature, nerves and vessels. The anesthesia must be induced with the smallest possible amount of the drug, and the position during the operation must counteract any tendency to aspiration from the diseased into the still sound lung. The only trouble is from the mechanical influence on the heart from the flooding of the pulmonary artery with blood as the conditions of the circulation in the lungs undergo such marked changes. The fever subsides almost at once. In less than ten weeks the sputum drops from 200 to 20 or 5 c.c., the cough subsides and the patient increases in weight. Friedrich does not hesitate to maintain that pneumolysis should be given a trial in all cases of severe progressing unilateral pulmonary phthisis with tolerable general condition. It may yield gratifying results. Afterward, internal, dietetic and climatic therapy should be resumed with renewed energy.

101 **Hereditary Exophthalmic Goiter.**—Grober reports three cases in the same family, a brother and sisters in the 50's and a niece of 25. The family history showed that the older patients had apparently healthy parents but an uncle and his son had diabetes. They had further two healthy brothers, but the children of one brother included the niece with exophthalmic goiter and one epileptic, while four died young. Grober comments that there seems to be in such cases hereditary

transmission of a general constitutional weakness with a predisposition to develop certain allied affections. He draws the comforting conclusion that by casual or conscious avoidance of certain factors it is possible for the members of such tainted families to escape the effects of their inherited tendency and to develop into healthy adults.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin.

August, XXVIII, No. 2, pp. 131-256.

113 Histologic Peculiarities of Vagina and Bladder During Pregnancy. (Histologische Besonderheiten von Vagina und Blase während der Gravidität.) J. Hofbauer.
114 Does the Weight of the Trunk Influence Shape of Pelvis? (Hat der Druck der Rumpflast Einfluss auf die Formbildung des Beckens?) S. Bokofzer.
115 Abdominal Pregnancy. (Bauchhöhlenschwangerschaft.) A. Jarzeff.
116 Axial Torsion of Large Intestine in Relation to Pregnancy
and Childbir les Dickdarms in
Beziehung zu urt.) G. Becker.
117 Case of Typhoic Tumor. (Typhus-
vereiterung des Ovarialtumors.) H. Gans.
118 *Missed Abortion. B. Rosinski.

118. Missed Abortion.—Rosinski is convinced that the retention of the dead fetus has a decidedly injurious effect on the general health of the woman, and cites two cases from his experience to sustain this view. Both of his cases seem to demonstrate the necessity for prompt evacuation of the uterus before injury to the maternal organism results. His patients presented extreme anemia with albuminuria and some edema. The effect on the uterus is especially bad, interfering with involution and impairing its future functional capacity.

Münchener medizinische Wochenschrift.

August 18, LV, No. 33, pp. 1721-1768.

119 *Sterilization of Rubber Gloves. (Gummihandschühe.) A. Fiessler, Y. Iwase and A. Döderlein.
120 Clinical and Bacteriologic Study of Paratyphoid. (Paratyphus.) A. Bingel.
121 *Full Directions for Technic of Serum Test for Syphilis. (Technik der Wassermann-Neisser-Bruckschen Serodiagnostik der Syphilis.) K. Taege.
122 *General Anesthesia and Lecithin. J. Nerking.
123 Roentgen-Ray Tests of Stomach Motor Functioning. (Magenmotilitätsprüfungen mit Hilfe der Röntgenstrahlen.) C. Kaestle.
124 Modification of Kocher's Hernia Operation. (Modifikation der Verlagerungsmethode bei der Kocherschen Bruchoperation.) H. Takata.
125 Local Anesthesia for Operations on Inguinal and Femoral Hernias. (Operation von Leisten- und Schenkelhernien in lokaler Anästhesie.) A. Nast-Kolb.
126 Technic of Walking Casts. (Technik der Gehgipsverbände.) J. Fränkel.
127 *Minor Points to Improve Schultze's Swinging. (Kleine Verbesserungen der Schultzeschen Schwingungen.) R. Ziegenspeck.
128 Boric-Acid Treatment of Otitis Media. (Borsäurebehandlung bei Mittelohreiterungen.) R. Dolger.
129 Eye Affection from Artificial Fertilizer. (Augenerkrankung mit einem künstlichen Düngemittel.) R. Hessberg.
130 Treatment of Cicatricial Contracture of Hand. (Therapie der Narbenkontraktur der Hand.) K. Vogel.

119. Practical Technic for Sterilization of Rubber Gloves.—The great drawback to the use of rubber gloves is that they do not bear boiling or steam sterilization without injury. In this communication from Döderlein's clinics at Tübingen and Munich it is asserted that the damage results merely from absorption of the moisture, and that it can be remedied by expelling the moisture from the rubber. This is accomplished by heating the gloves until they are thoroughly dry throughout. The gloves must not touch each other, but lie spread out on one of a set of wire netting trays. A further improvement is that the gloves after the steam sterilization are dipped, still wet, in a 20 per cent. suspension of talcum powder in alcohol. Each is then held up to drain and laid flat in the drying box through which hot air at 75 C. (167 F.) is passed for about 45 minutes. When taken out they are found covered with a thin, even coating of the talcum powder inside and out.

121. Technic of Serum Diagnosis of Syphilis.—Taege has been studying the details of this technic at Neisser's clinic, and gives it here with all the minor points. The articles necessary are enumerated as follows: meat-grinding machine to prepare the liver; ice chest; vacuum apparatus to concentrate the fluid by heat; a vibrating apparatus for washing out the blood corpuscles and for distributing the antigen through the salt solution; centrifuge; animal board; incubator, and the reagent and graduated glasses, pipettes, water bath, boiling pot, platinum needle and cage for the animals.

122. Anesthesia and Lecithin.—Nerking reviews research which seems to show that anesthetics are taken up by the lipoids, and especially by the lecithin, of the central nervous system and form a stable solution with them. According to this theory an anesthetic acts more vigorously the greater its solubility in the lipoids. The stable combination of the anesthetic with the lipoids of the central nervous system is what induces the anesthesia. He has found that if lecithin is supplied from without, after general anesthesia has been induced, the anesthetic can be attracted out of its combination with the lipoids of the central nervous system. Experiments with animals have constantly demonstrated that the anesthesia can be shortened or suspended altogether if a suspension of lecithin is injected intravenously soon after the animal has come under the influence of the anesthetic.

127. Schultze's Swinging.—Ziegenspeck does not approve of the Ogata or Schröder technic as he has witnessed a case of rupture of the liver afterward. The main advantage
Schultze's swinging is that the gravitation of the liver ca
artificial respiration not only of the costal, but also
abdominal and diaphragmatic type. He suggests, as
improvement, to take the head between the two
and let the body hang down before seizing the
chest of the child with the fingers accordi
directions. This insures that the trachea ar
before the swinging is begun. He also
below the level of the chest, not at
this movement, very gently, wit
angle of 45 degrees with the
bent over gently. Before
ment to the forcible
pause, allowing
downward mo

Wiener

August 20, XXI, No.

131 Proportion of Tubercle Bacilli in
Products at Leipsic. (Tuberkelba.
zum Verkauf kommenden Milch und
Eber.
132 Theories of Origin of Senile Cataract.
Alterskatarakt.) R. Possek.
133 Pulsating Vessels in the Throat. (Befunde vo
Gefässen im Rachen.) S. Tenzer.
134 *Examination of the Blood in Various Periphera
Provinces, with Circulatory Disturbances. (Blutun
ung in verschiedenen peripheren Gefässprovinzen bei Zi
tionsstörung.) M. Krämer.

134. Examination of Blood at the Periphery.—Krämer gives the findings in the blood drawn from the ear, finger and toe of a number of bedridden patients with various circulatory disturbances. In case of defective circulation there is generally an accumulation of red corpuscles in the blood from the toe. The specific gravity of the toe blood is also increased. This difference between blood from the toe and from the ear is a sign of insufficient heart action.

Zentralblatt für Gynäkologie, Leipsic.

August 22, XXXII, No. 34, pp. 1113-1136.

135 L. Goth's Technic for Treatment of Postpartum Hemorrhage from Atony of Uterus. (Neuer Handgriff zur Behandlung der atonischen Nachblutungen.) G. Zickel.
136 *Simple Technic for Management of Delivery After Vaginofixation. E. Schroeder.
137 Circular Laceration of Vagina. (Zirkulärer Abriss der Vagina am Introitus.) A. Weischer.

August 29, No. 35, pp. 1137-1168.

138 Cure of Insufficiency of Bladder Sphincter by Drawing Forward the Uterus. (Beseitigung einer Insuffizienz des Sphincter vesicæ durch Verlagerung des Uterus.) E. Schroeder.
139 *The Curette and Treatment of Abortion. F. Engelmann.
140 Transplantation of Epithelium of the Vagina to Cure Erosions in the Portio Vaginalis. (Transplantation des Scheidenepithels als neues Verfahren zur Heilung der Erosionen der Portio vaginalis.) V. Frommer.

136. Management of Childbirth After Vaginofixation.—Schroeder relates that he has carried four women through a confinement after a low vaginofixation of the uterus without isolated suture of the peritoneum. Another woman who had had three abortions before the fixation, aborted again afterward. In the other cases delivery proceeded naturally. In one there was transverse presentation, requiring version and extraction In another case the external os had receded during labor to a point behind and above the promontory He introduced half of his hand into the uterus past the internal os and exerted gentle traction forward and downward This brought the cervix and lower segment of the uterus and the child's head down into the pelvis with surprising ease

139 **The Curette in Treatment of Abortion**—Engelmann has been trying to ascertain how extensively the curette is used by general practitioners in treatment of abortion in the first months of pregnancy He sent a question blank to 80 physicians in and around his city, Dortmund, and received replies which showed that 54 colleagues had had 1 500 cases of abortion in their charge during the year, and that 37 used the curette unconditionally and 9 under certain conditions Only 7 refuse to use it under any circumstances These groups do not
to include specialists, and the physicians who reported the largest
recor umber of cases of abortion are the ones who are unconditional
differen ocates of the curette These findings show, he says, that
marked rette evidently does not deserve the wholesale denuncia
tected betw red on it by certain writers
feeding The **Grèce Médicale, Syra**
and is an index *July 15, X Nos 13 14, pp 27 28*
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he cried As the child **Policlinico, Rome**
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spell Febrile conditions affect *No 8 pp 329 3[illegible]6*
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temperature of o the peritoneum He reports a case from his
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toxin al mischief and on the assumption of adhesions the
qu omen was opened The stomach omentum and liver were
found studded with tubercles, with the greater number around a point in the stomach wall where there were traces of a healed ulcer The adhesions were detached and the abdomen was sutured Diagnosis was made of tuberculous peritonitis Microscopic examination of two or three scraps excised from a tubercle showed that it consisted of giant cells with particles of vegetable cells, giving the starch reaction with no traces of tuberculosis The vegetable residue had probably escaped from the stomach through the ulcer and had induced the local reaction The patient has been in the best of health since

144 **Experimental Pericardiectomy**—Parlavecchio has been conducting considerable experimental research on the question whether or not pericardiectomy could ever have a therapeutic application A number of cases are on record of congenital absence of the pericardium, and in most of these which he summarizes, there were no disturbances calling attention to its absence, which was an autopsy surprise There were circulatory disturbances in a few, but the prognosis of this defect seems to be good when the thoracic organs are normal Experiments on ten dogs showed that pericardiectomy is an operation on about the same plane as splenectomy or partial thyroidectomy It should be regarded only as a last resort, but under these conditions it has good prospects of success Broad resection of the pericardium may, therefore, be considered in cancer of the adjoining organs or in chronic pericarditis resisting conservative measures The pericardiectomy would leave a defect which might favor infection of the pleura, but pleurisy is much easier to cure than pericarditis, and it is the lesser of two evils The Rydygier technic gives ample access He does not try to avoid sacrificing the left phrenic nerve, having found that the functions of the diaphragm do not suffer by its removal, while its retention might result in dangerous adhesion of the nerve to the heart The technic should be dominated by the necessity of avoiding *injury of the auricles* and large vessels and to refrain from touching the right wall of the pericardium, for fear of injuring the phrenic nerve or the other pleura, which would be liable to entail paralysis of the diaphragm or bilateral pneumothorax In none of his dogs were the adhesions after pericardiectomy very calamitous The fewest adhesions were found in dogs with more extensive resection Some of the dogs are in apparent good health to date, five or six months since the operation, although all grew thin at first and the left ventricle became hypertrophied

145 **Suppurative Pancreatitis**—Fasano's patient was a girl of 13 An operation was performed as the last resort, but the advanced autointoxication, stercoremia and complete paralysis of the intestine rendered the intervention futile The syndrome presented is studied from the differentiating point of view, with analysis of the corresponding literature

Sei-I-Kwai Medical Journal, Tokyo.

July 31, XXX, No 7, pp 307 314

146 *The Extirpation of Bugs R Oka *Commenced in No 6*

146 **Extermination of Vermin**—Oka's report deals mainly with vermin in barracks, and describes numerous methods of extermination practiced None was found entirely satisfactory, but the best results seemed to follow pouring a 15 per cent solution of caustic soda into the crevices from the spout of a teapot Referring to the bites, Oka says that when the region swells or itches sucking the region stung for 25 or 30 minutes, will give relief and cure if repeated once or twice

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them A selection from these volumes will be made for review, as dictated by their merits or in the interests of our readers

ANATOMY DESCRIPTIVE AND SURGICAL By Henry Gray F R S, Le turer on Anatomy at St George's Hospital Medical College, Lo don 17th Edition Revised and Re edited with additions by Jo Chalmers DaCosta M D Professor of Principles of Surgery of Clinical Surgery in Jefferson Medical College Philadelp and Edward Anthony Spitzka M D Professor of General A omy in Jefferson Medical College Philadelphia Cloth Pp 1 with illustrations Price, $6 00 Philadelphia Lea & Febig 1908

GYNECOLOGY AND ABDOMINAL SURGERY Edited by Howard Kelly M D F R C S (Hon Edin), Professor of Gynecol Surgery at Johns Hopkins University, Baltimore and Cha P Noble M D S D Clinical Professor of Gynecology at Woman's Medical College Philadelphia Cloth Pp 862 w illustrations Price $8 00 Vol II Philadelphia W B Saunders Co, 1908

GENERAL SURGERY By Ehrich Lexer M D, Professor of Surgery, University of Berlin Translated from Second German Edition by Dean Lewis M D Instructor in Surgery Rush Medical College Edited by Arthur Dean Bevan M D Professor of Surgery Rush Medical College Cloth Pp 1041 with illustrations Price, $6 00 New York D Appleton & Co, 1908

DISEASES OF THE SKIN AND THE ERUPTIVE FEVERS By Jay Frank Schamberg A B M D, *Professor of Dermatology and Infectious* Eruptive Diseases in Philadelphia Polyclinic and College for Graduates in Medicine Cloth Pp 534 with illustrations Price $3 00 Philadelphia W B Saunders Co, 1908

THE ORIGIN AND PREVALENCE OF TYPHOID FEVER in the District of Columbia (1907)) Hygienic Laboratory Bulletin No 44 May 1908 Report No 2 By M J Rosenau L L Lumsden and Joseph H Kastle Paper Pp 63 with illustrations Washington Government Printing Office 1908

FOURTH ANNUAL REPORT OF THE HENRY PHIPPS INSTITUTE for the Study Treatment and Prevention of Tuberculosis Feb 1 1906 to Feb 1, 1907 Edited by Joseph Walsh A M M D Paper Pp 429 with illustrations Philadelphia Published by the Henry Phipps Institute 1908

TEXT BOOK OF HUMAN PHYSIOLOGY By George V N Dearborn A M (Harv) Ph D M D (Col) Professor of Physiology in the Medical and Dental Schools of Tufts College Boston Cloth Pp 550 with illustrations Price $4 00 Philadelphia Lea & Febiger 1908

TRANSACTIONS OF THE SOUTHERN SURGICAL GYNECOLOGICAL ASSOCIATION Vol XX Twentieth Session Held at New Orleans December, 1907 Edited by W D Haggard M D Clot Pp 570 with illustrations Published by The Association, 19

FURTHER STUDIES ON ANAPHYLAXIS Hygienic Laborator ul letin No 45 June 1908 By M J Rosenau and Jo F Anderson Paper Pp 61 Washington